

# Introduction

## Welcome to the Communication Assets Survey & Mapping (CASM) Tutorial

By using this Tutorial, you can expect to learn...

Communication Assets Survey component:

- How data is defined and organized in CASM
- How to enter data for Radio Systems, Dispatch Centers and the Agencies that use these assets in CAS
- How to import data into CASM from the FCC database

Communication Assets Mapping component:

- How to use CAM to visualize interoperability
- How CAM determines interoperability
- How to use the What-if feature in CAM
- How to generate the TICP Report

# Purpose

## The primary purpose of the Communication Assets Survey and Mapping tool is

1. Interoperability Analysis and Visualization
2. Communication Assets Inventory (e.g. Radio Systems, Gateways, Radio Caches), specifically, interoperable communication methods (e.g. common channels, common talk groups, use of gateway)
3. Tactical Interoperable Communications Plan (TICP) report generation, Section 3 and Appendices B-E

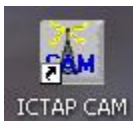
# Tools

## CASM comprises two components

### Communication Assets Survey (CAS)

A website that is composed of a set of forms and a database that support data collection and specification of State/Urban Area assets, such as radio systems or gateways and the agencies that use them.

### Communication Assets Mapping (CAM)



A web-client application to display State/Urban Area assets on a map and perform interoperability analysis. In addition, using CAM, the Tactical Interoperable Communications Plan (TICP)

Section 3 and Appendices B-E and other reports can be generated.

## Login

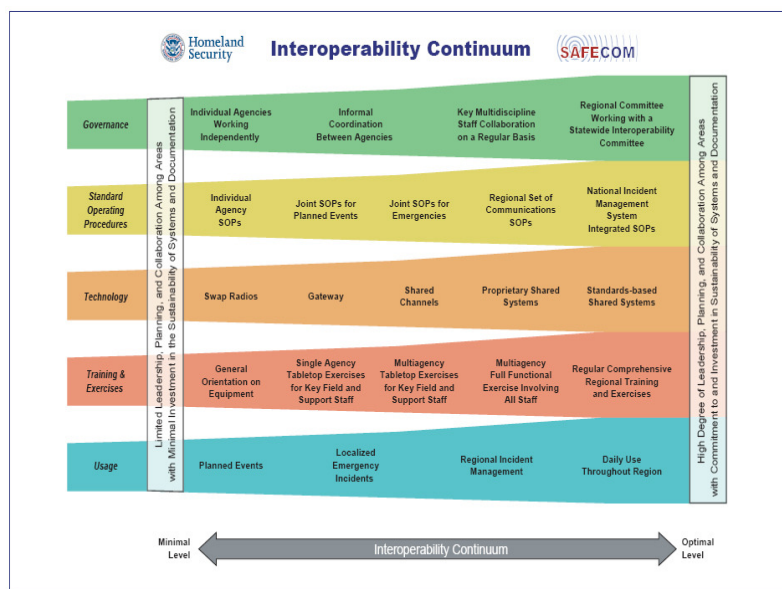
Each component (CAS and CAM) requires you to login with a User ID and password. The same User ID and password works for both components.

## Interoperability

### Interoperability as defined in CASM

**Interoperability** is figured ***between agencies*** that utilize radio systems and other interoperability methods such as mutual aid channels, gateways, dispatch centers and radio caches.

CASM has employed the SAFECOM Interoperability Continuum to assist in organizing and understanding interoperability methods.



In particular, the CASM tool utilizes the Technology element of the Interoperability Continuum. Click the image for more information about SAFECOM and the Interoperability Continuum.

In CASM, interoperability methods are generally defined as follows:

**Standards-based Shared Systems** - Radio Systems that are operating as P25 compliant and used by two or more agencies.

**Proprietary Shared Systems** - Radio Systems that are not P25 compliant and are used by two or more agencies.

**Shared Channels** - National, regional, or local channels that are identified and known as mutual aid or interoperability channels. An example is the NPSPAC set of channels. These channels must be used by two or more agencies in a State/Urban Area to be considered as an interoperability method in CASM.

**Gateways** - Any device that is used to link dissimilar systems. An example is an ACU-1000 Interconnect Device.

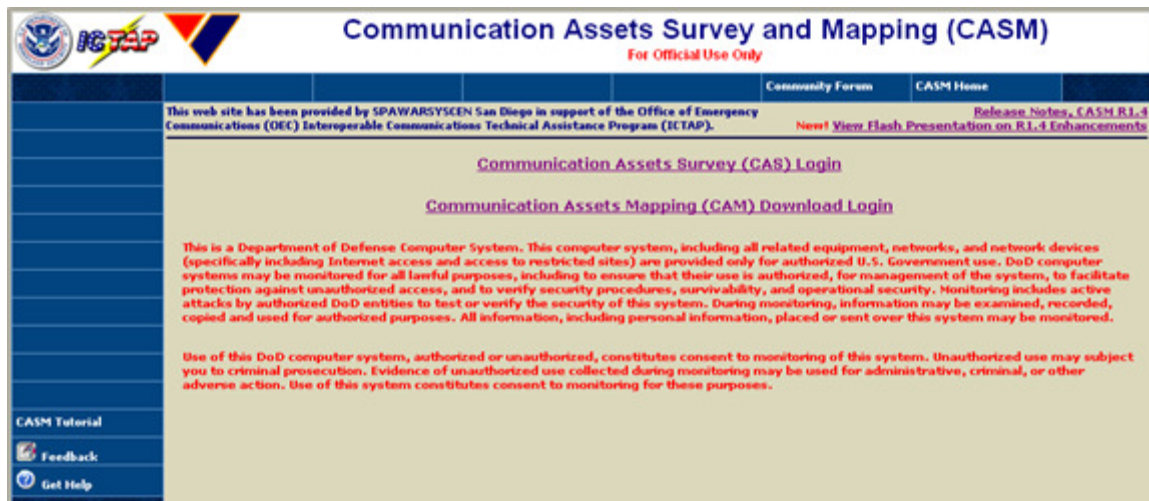
**Swap Radios** - A radio cache that is configured and used to provide interoperability at the scene of an incident.

## Getting Started with CAS

### How To Access the Tools

You can access the CASM tools by opening an internet browser window (such as Internet Explorer, Firefox or Netscape Navigator) and going to:

**<https://franz.spawar.navy.mil>**



From this page click the top link: **Communication Assets Survey (CAS) Login** to login and begin entering data.

The second link, Communication Assets Mapping (CAM) Tool Login, will enable you to begin downloading the CAM application.

Once you click the CAS link, you will see a login screen. Enter your user ID and password.

Depending on your user account privilege level, to complete the login process you may need to select a State/Urban Area. The screens that appear once you have entered your User ID and password will guide you through this process. If your

user account is linked to a single State/Urban Area you will be fully logged-in upon entering your user ID and password.

The State/UA Homepage screen will appear when you are fully logged-in:

**Communication Assets Survey (CAS)**  
For Official Use Only

State/Urban Area: **STATE/URBAN AREA: Lake Tahoe** | Summary Information | Points of Contact | Accounts | Community Forum | Logout | Welcome, Alice Moore

**Welcome to the Communication Assets Survey (CAS) Website**

**43 Agencies Associated with My State / Urban Area: Lake Tahoe**

All data entered into CASM is related to First Responder Agencies and Organizations that operate in the State / Urban Area. Check the table below to confirm there are entries for each Agency or Organization you wish to include in the CASM database for your jurisdiction(s). You may Add, Edit or Delete Agencies / Organizations from the list using this page.

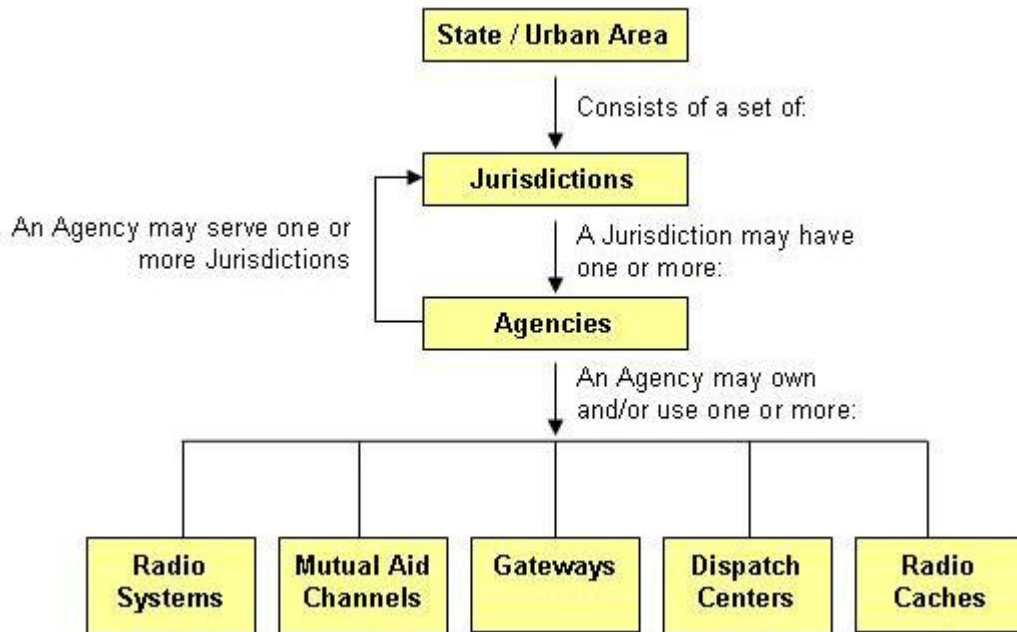
Filter:  Filter Columns: ☒ Agency ☐ Discipline ☐ Jurisdiction

Agency Name	Discipline	Primary Jurisdiction	View/Edit/Delete?
Baxter PS-Office	Public Safety Communications	Placer County - Baxter	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Bear Valley Police	Police	Alpine - Bear Valley	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Big Bend Police	Police	Placer County - Big Bend	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Bowman Lake EMS	EMS	Nevada - Bowman Lake	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
California Highway Patrol	Highway Patrol	California	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Cameron Park Police	Police	El Dorado County - Cameron Park	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Comms Dept	Public Safety Communications	Carson City - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Department of Health	Public Health	Carson City - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City EMS	EMS	Carson City - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Fire	Fire	Carson City - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Gov	Government	Nevada - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Police	Police	Carson City - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Carson City Public Works	Public Works	Nevada - Carson City	<input type="button" value="VIEW"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>

[Example State/UA Homepage]

## Data Organization

Understanding how data is organized in CASM



### Definitions of terms

**State/Urban Area** - The region of interest. Generally, it may be a county, a set of counties, or a state.

**Jurisdiction** - A state, county, city, town, township, or other geographic or political entity.

**Agency** - Typically, a first responder agency or organization such as a police department, sheriff, or fire department. Can also be a governmental agency, organization or Emergency Management group. Think of an agency as a group of people providing a service in the interest of public safety that other public safety agencies need to interoperate with. An Agency may own, maintain, or use communication assets.

**Radio System** - A Land Mobile Radio system; an organized set of channels or talk groups that are used by an agency for communications. The channels are likely repeated on one or more towers.

**Mutual Aid** - A radio channel or set of channels (system) that has a name and is recognized or known to be used for interoperability on a national, regional or community basis. An example is the NPSPAC set of mutual aid channels.

**Gateway** - An audio bridge device used by multiple Agencies to provide interoperability between dissimilar Radio Systems.

**Dispatch Center** - A center that provides dispatch service for one or more Agencies. It may or may not also perform as a PSAP, may or may not provide console patches.

**Radio Cache** - A defined set of radios that is configured, stored, and available to support a response to an incident.

## User Accounts

**Each person who requires access to the CASM tool will be assigned a User ID and password.**

Authorization for receiving a user account is handled by your state/urban area. It is recommended that each person has their own user account and that User IDs and passwords are not shared.

Each User Account has a Privilege Level, Assignments and Rights.

Privilege Levels:

- **State/Urban Area** - enables the user to add/edit/delete data for all agencies and most communication assets in the State/Urban Area. A user with State/Urban Area Privilege requires a State/Urban Area Assignment.
- **Jurisdiction** - enables the user to add/edit/delete data for all agencies that exist in the jurisdiction(s) to which they are assigned. A user with Jurisdiction Privilege requires a State/Urban Area Assignment and Jurisdiction Assignment.
- **Agency** - enables the user to add/edit/delete data for the agencies to which they are assigned. A user with Agency Privilege may not create new agencies in the State/Urban Area. A user with Agency Privilege requires a State/Urban Area Assignment and Agency Assignment.
- **CAM Only** - enables the user to access only CAM. A user with CAM Only Privilege may not add/edit/delete any data in the State/Urban Area. A user with CAM Only Privilege requires a State/Urban Area Assignment.

Assignments:

- **State/Urban Area** - all users are linked to at least one particular State/Urban Area that contains the data they are adding, editing or viewing.
- **Jurisdiction** - users with Jurisdiction Privilege are linked to one or more counties within a State/Urban Area for which they will be adding, editing or viewing data.
- **Agency** - users with Agency Privilege are linked to one or more Agencies within a State/Urban Area for which they will be adding, editing or viewing data.

Rights (User Account Administrative Rights):

- **All Rights** - enables the user to create new user accounts with equal or lower privileges, rights and assignments as their own. May delegate the ability to create new user accounts to another user.
- **View & Create** - enables the user to create new user accounts with equal privileges and assignments as their own, but may not delegate the ability to create new user accounts to another.
- **None** - user is unable to create new user accounts.

To view your User Account Privileges and Assignments, from the top menu click on "Accounts" --> "Personal Profile".

To Change your Password, go to Personal Profile, and Click the link that says: "Change Password". You can update your user account contact information, such as your email address, by clicking the "Update Contact Info" link.

If you have Administrative Rights of "All Rights" or "View & Create" rights, you will also see a menu option for "Account Administration" under the "Accounts" menu selection.

**Communication Assets Survey (CAS)**  
For Official Use Only

State/Urban Area: Lake Tahoe | Summary Information | Points of Contact | Accounts | Community Forum | Logout | Welcome, Alice Moore5

**Personal Account Profile**

My Name: Alice Moore5

My User ID: moore5a  
My Privilege: Jurisdiction  
My Administrative Rights: View & Create Rights (ability to create user accounts)  
My Administrative Manager (AM): Alice Moore2

To change my password, click [Change Password](#).  
To update my contact information, click [Update Contact Info](#).

**My State/Urban Areas**

State/Urban Area
Lake Tahoe

**My Jurisdictions**

Jurisdictions
Alpine
Amador
El Dorado County
Nevada
Placer County
Sierra

**My Agencies**

Agencies
All Agencies in assigned jurisdictions

[Example of Personal Account Profile Page]

## State/Urban Area Homepage

Once you log into to CAS, you will see the State/UA Homepage

The **most important** part of entering data into CASM is to accurately identify the communication assets that are **owned and used** by the agency/organization you can add/edit data for.

The State/Urban Area Homepage presents a table that shows you all the agencies that you may enter data for. If you need to add an agency, click the green Add New Agency button.

If you have State/Urban Area Privilege, you may enter data for any agency in the state or urban area dataset. If you have Jurisdiction Privilege, you may enter data for any agency that is in one of your assigned counties. If you have Agency Privilege, you may enter data for any of your assigned agencies. As you are entering data you will be identifying the communication assets that your agencies either own or use.

## What do you mean by "Own" and "Use"?

We say that an agency "owns" a communication asset if that agency actually does own it, manage it, or is responsible for it.

- Ownership of an asset limits who can edit or configure that asset to the owner(s).
- Owned assets are: Radio Systems, Gateways, Dispatch Centers, and Radio Caches.
- Non-owned assets are: Mutual Aid.
- If your Agency owns an asset, you will be entering the data for that asset into CAS.

We say that an agency "uses" a communication asset when that agency does actually use it. An Agency that "owns" a communication asset is automatically assumed to "use" it. In addition, an Agency may "use", but not "own" a communication asset.

- **Radio Systems:** If your agency uses a Radio System that you do not own, the owner will enter the Radio System information such as the Channels, Talk Groups, Structures and Repeater Base Station information. As an Agency that uses the Radio System, you will not be able to define the system, but will be able to indicate that your agency uses the system and which channels or talk groups your agency uses on that system.
- **Mutual Aid:** Mutual Aid is the only communication asset in CASM that is not owned. Anyone may initiate or edit a Mutual Aid entry and may indicate that their agency uses this communication asset. It is also important to indicate that the mutual aid channels are configured on your agency radios.
- **Dispatch Centers:** If your agency uses a Dispatch Center that is owned or managed by a different agency, the owning agency is responsible for indicating all the agencies that are served by the Dispatch Center.
- **Gateways:** If your agency uses a Gateway or is configured on a Gateway that is owned or managed by a different agency, the owning agency is responsible for indicating all the agencies that are served by the Gateway.
- **Radio Caches:** If your agency owns a Radio Cache, you are also using it. If your agency may deploy a cache that is owned or managed by a different agency, the owning agency is responsible for indicating all the agencies that may deploy the cache.

## Basic Agency Information

It is a good idea to confirm the information that is entered for your agencies. Click the Edit button in the table to view the basic information and modify it, if necessary.

## Agency or System Perspective

<b>What kind of User are you?</b>
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CAS simultaneously supports two perspectives for data entry.

### System Perspective

A user who has a System Perspective may be a Communications Manager, someone who takes care of a large county-wide system, or someone who manages several systems for a number of different agencies in the State/Urban Area.

If you are have a System Perspective you likely will feel that you represent a



Radio System rather than an Agency. You plan on entering data for your Radio System, including channel information, talk groups, structures, and repeater base station information. You also may enter data for a dispatch center, gateway, radio cache or mutual aid channels.

It is important that you identify the agencies that use these resources.

You will probably not use the Agency Usage section.

### **Agency Perspective**

A user that has an Agency Perspective is someone who is entering data on behalf of a single agency, or maybe a small group of agencies.

If you have an Agency Perspective you will likely feel that you are entering data for an Agency and plan on indicating how your Agency uses Communication Assets, in particular, systems, channels and talk groups.

It is possible that you will not need to enter new Communication Asset data, but will link your agency to existing data. However, you can enter any type of data that is collected in CAS.

You should pay particular attention to the Agency Usage section.

### **Here's the good news!**

You do not have to select your "Perspective" upon entering the tool. All pages are available to all users. Your perspective may change as you are using CAS. We simply want to point out that both types of users will find a workable approach.

## **How a Typical Page Works**

<b>Common CAS Page Format</b>
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Typically, you will make a selection from a drop-down list, enter data into form fields, then click "SAVE".

When you make a selection from a drop-down list often a summary table will appear that shows any previous entries made on that form for that item. If the summary table is empty after making a selection from the drop-down list, then no records have been added yet for that item on that page.

Select Something:

Form Fields:   
 ...

Enter some Notes:

Summary Table:

		View / Edit?

You can create new records by filling in the form fields and clicking the "SAVE" button. Once you click "SAVE" the record is written to the database and will appear in the summary table.

You may edit a record by clicking the "EDIT" button on the row in the summary table. Clicking "EDIT" will re-populate the form fields above with the values you had previously saved. You may make changes and click "SAVE" again. Now the record will be updated with your new changes.

The "RESET" button usually clears the form so that you can start a particular entry over, but will not remove the items in the summary table.

### **All sections begin with a Summary Table**

Usually, a data entry section, such as the Radio System page or Dispatch Center page, starts with a Summary Table. The entries in this table give you an opportunity to see if the particular Communication Asset you are about to initiate already has been entered into the database for your State/Urban Area.

It is a good idea to review those summary tables to make sure that duplicates are not being entered.

### **Required Fields**

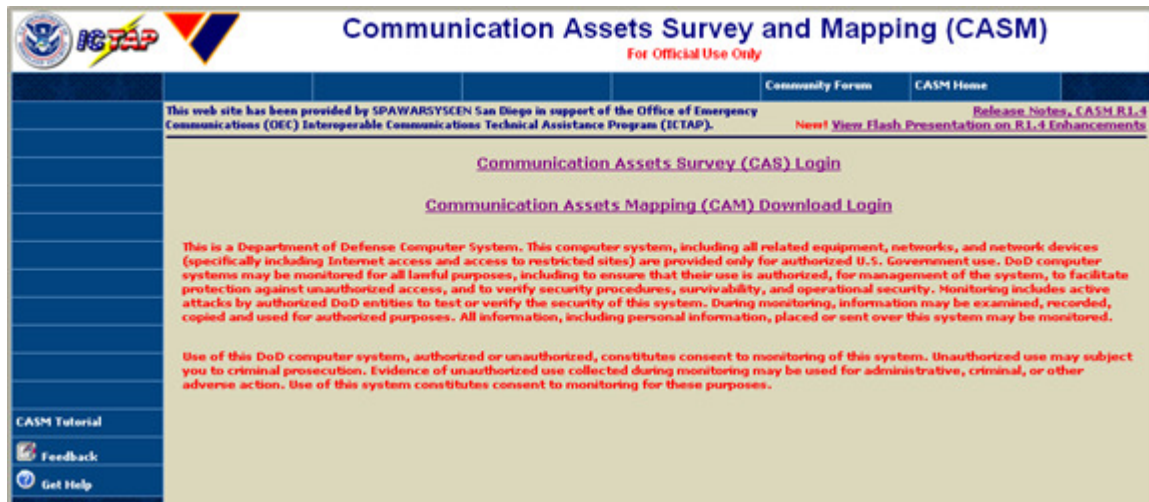
Required fields per page are marked with an Asterisk (\*). The "SAVE" button should be disabled until all required fields have been entered.

## **Getting Started with CAM**

## How To Access the Tools

You can access the CASM tools by opening an internet browser window (such as Internet Explorer, Firefox or Netscape Navigator) and going to:

**<https://franz.spawar.navy.mil>**



You already learned that by clicking the top link: Communication Assets Survey (CAS) Login you can login and begin entering data.

Clicking the **Communication Assets Mapping (CAM) Tool Login**, will enable you to download and install the CAM application.

The CAM component is a web-client tool. That means that you will have a small application on your computer and will need to have an internet connection to make it work.

There are two steps to initially accessing CAM:

1. Download the application to your computer. Once downloaded and installed, you will have an icon on your desktop that will open the program.
2. Double-click the CAM icon on your desktop to login and open the program.

## Download and Install Instructions:

Once you click the CAM link, you will see a login screen. Enter your User ID and password. Click "Login".

You will now see the End User License Agreement. Read the agreement. If needed, scroll down, click 'I Accept' then click "SUBMIT".

A download dialog box will appear on your screen. Select "RUN". This begins the download and installation process.

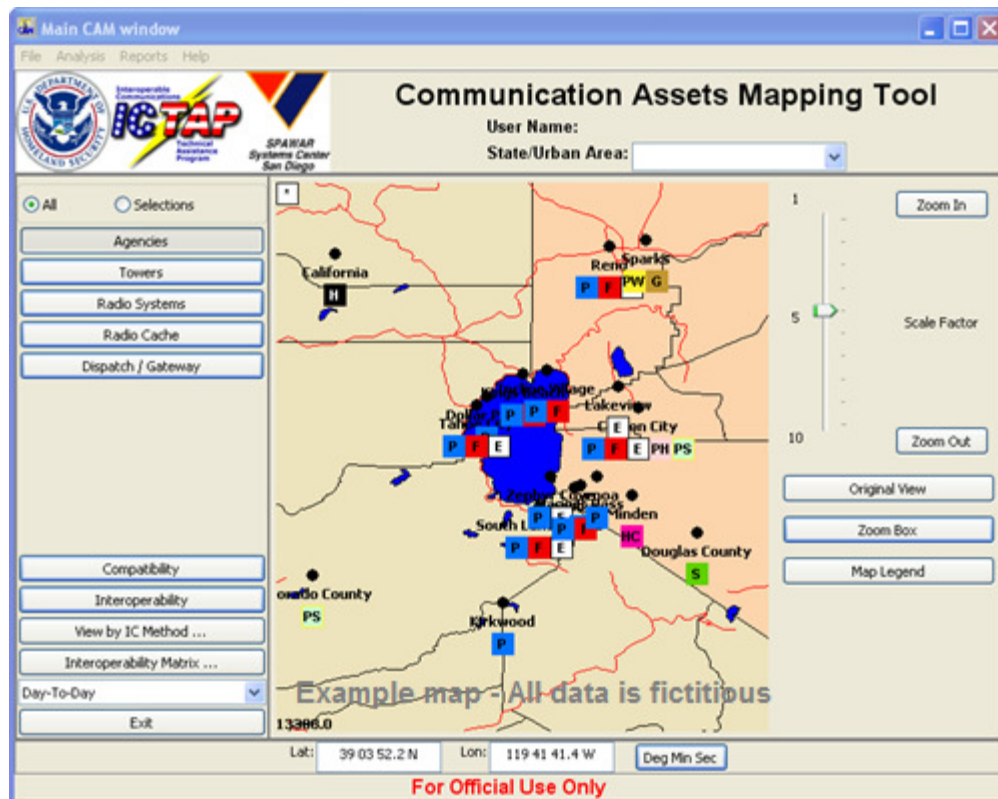
A new dialog box will appear for the installation wizard. Accept all the default selections by clicking the Next button. Finally, click the Finish button.



Now, check your computer desktop for the ICTAP CAM icon.  
Double-click the ICTAP CAM icon.

A new login window will appear. Enter your user ID and password again. Click "Login".

The tool will open to the default window. You are fully logged-in.

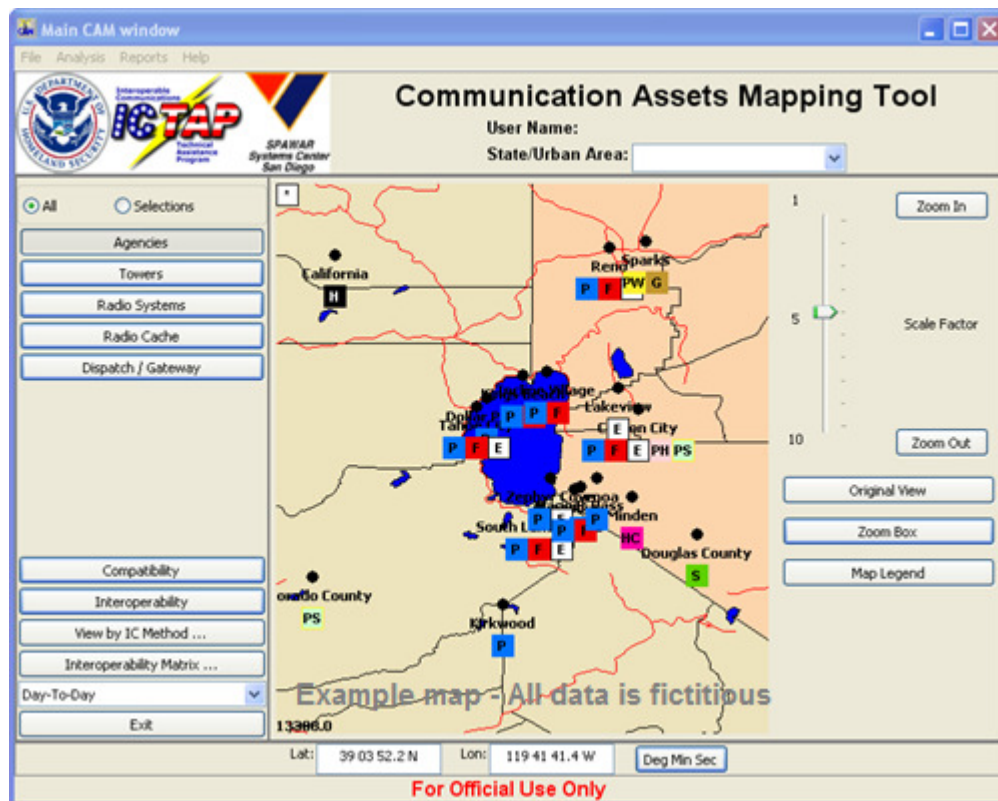


[CAM Opening Screen Example]

## Map View

### CAM Default Map View

The CAM component enables you to visualize Communication Assets and Interoperability on a map workspace. Data can only be viewed in CAM, not edited.



[CAM Opening Screen Example]

## Uncluttered Map View

A map of your State/Urban Area will appear once you login to CAM. The map is deliberately straight-forward so that icons and interoperability are obvious.

- Red lines represent major highways.
- Black lines represent county boundaries.
- If there is more than one state in your urban area, they will be different colors.
- Blue represents bodies of water.

You can change the size of the icons by going to the top menu, select File --> User Preferences...

## Click Buttons to Display Icons

Click the buttons on the left panel of the screen. Icons that represent these data elements will plot on the map if data has been entered into the database through CAS (Communication Assets Survey) component. You can plot:

- Agencies
- Radio Systems
- Towers
- Dispatches / Gateways
- Radio Cache

Click any icon that appears on the map for more information about that object.

## Zoom the Map

Use the Slider or click the Zoom buttons on the right panel of the screen to change the map view.

**Tip!** With your mouse cursor pointing somewhere on the map, click the right-mouse button to display a context sensitive menu for additional choices.

## Map Legend

Click the Map Legend Button to assist with the map icons.

## More Help

More Help is available by selecting Help --> On Window... from the top menu.

# Data Popups

## CAM Data Popups

Each CAM icon can be clicked for more detail about that item.

Agency Information - For Official Use Only

**Agency Information**  
For Official Use Only

- Agency Name: Tahoe City Police
- Agency Point
- Serves: Tahoe
- Interoperability
  - Proprietary
  - Shared
  - Shared
  - Gateway
- Radio System
  - System
  - Fire Mutual
  - Incline Village
  - Tahoe City
- Dispatch Center
- Gateways Owned
- Radio Caches

**Radio System Information**  
For Official Use Only

- Radio System Name: Tahoe City VHF Conventional
- Radio System Point of Contact: None
- Agencies Served by System:
  - Dollar Point Police Dept
  - Tahoe City EMS
  - Tahoe City Fire
  - Tahoe City Police (system owner)
- Radio System Details:

Mfg:	GE	Simplex/Repeated:	Both
Model:		Analog/Digital:	Analog
Frequency Band:	VHF High-Band (150-174MHz)	P25:	None
Conventional/Trunked:	Conventional	Voting:	No
Trunking Kind:		Simulcast:	No
Wide/Narrow Band:	Wideband	Encryption:	None

Number of Channels	Number of Mobile Radios	Number of Handheld Radios
3	45	65
- Tower(s):
  - Alpine Meadows Road

Example popup - All data is fictitious

Print Close

[CAM Popup Example]

## Agency Popup

The Agency Pop-up provides a quick look at the agency data, including:

- Available Interoperability solutions for the Agency

- Radio Systems & Mutual Aid Channels/Systems used
- Channels and Talk Groups used
- and more!

### **Radio System Popup**

- Agencies that use the Radio System
- Channels and Talk Groups
- Towers

### **Mutual Aid Popup**

- Agencies that use the Mutual Aid Channel/System
- Channels and Talk Groups
- Towers

### **Tower Popup**

- Tower Location and Details
- Radio Systems and Channels configured on Tower

### **Dispatch Center Popup**

- Dispatch Center details
- Agencies dispatched out of location

### **Gateway Popup**

- Gateway Details
- Agencies configured on Gateway
- Channels and Talk Groups configured on Gateway

### **Radio Cache Popup**

- Radio Cache Details
- Agencies that may deploy Cache
- Channels and Talk Groups configured on Cache

### **Interoperability Popup**

While showing Agencies on the map, click the Interoperability button. The color codes will change to reveal each agency's highest level of interoperability. If you click an Agency icon now, you will get a different popup that shows all interoperability methods this agency has with at least one other agency in the state/urban area.

- Interoperability methods are categorized according to the SAFECOM Interoperability Continuum.
- Details are listed below each category.

### **Compatibility Popup**

While showing Agencies on the map, click the Compatibility button. Use your mouse to draw a line between two agencies on the map. When you finish drawing the line, a popup window will appear that shows how these two agencies can interoperate.

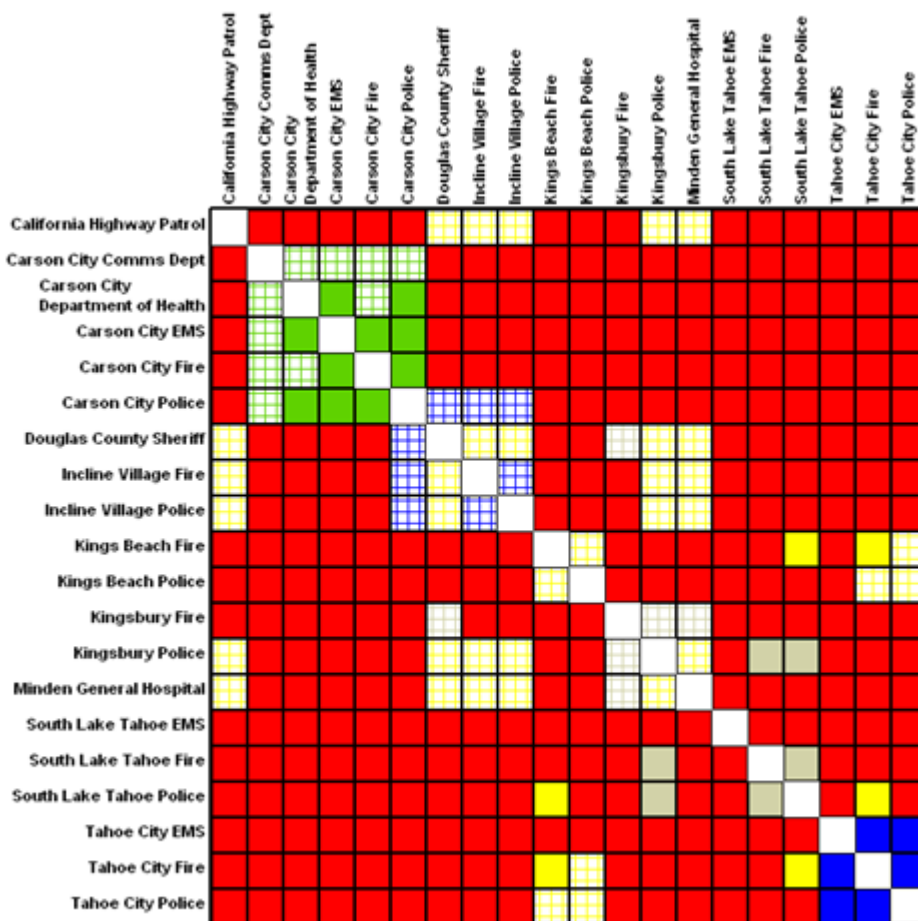
- Interoperability methods are categorized according to the SAFECOM

- Interoperability Continuum.
- Details are listed below each category.

## Interoperability Matrix

### Visualizing the Interoperability between agencies

The Interoperability Matrix provides the quickest way to visualize interoperability between pairs of agencies in the State/Urban Area.



Example Matrix - All Data is Fictitious

[CAM Interoperability Matrix Example]

### Click the Interoperability Matrix Button

A dialog box will appear so that you can select the agencies that you wish to view in your matrix. You can select to view agencies by:

- Discipline
- Agency Name



- Geographically, by Selecting from a map

Once you have made your selections, click "Apply".

The Interoperability Matrix will appear.

The names of the agencies you selected will show across the top and down the left-hand side. Each intersection box is color-coded according to the highest level of interoperability common to both agencies. In other words, you can get a quick sense of whether pairs of agencies can interoperate by viewing the color code.

**Tip!** The color-code Legend is available from the Interoperability Matrix window top menu, by selecting Help --> Legend...

### **Click on an Intersection Box**

If you click on any intersection box, the Compatibility Pop-up will open, showing you detail about how this pair of Agencies can interoperate.

- Interoperability methods are categorized according to the SAFECOM Interoperability Continuum.
- Details are listed below each category.

## **Data Entry Details**

### **CAS Data Entry**

This Tutorial will focus on Radio Systems and Dispatch Centers. The other communication assets: Mutual Aid, Gateways, and Radio Cache follow similar patterns.

### **CASM is a Collaborative Tool**

One of the powerful features of CASM is that data for a State/Urban Area can be entered simultaneously by numerous people across a state/urban area. You will be able to view data that a colleague is entering and they will be able to view yours.

It is our hope and expectation that sharing this data will illuminate interoperability gaps and assist in solving problems.

If there is data you do not wish to share with other State/Urban Area members, do not enter it into the tool.

**Data Entry may be done in several short sessions** Another nice feature of CASM is that data entry does not have to be done in one session. You can enter small amounts of data at a time, do something else, then return to it later. Each page requires that you click "SAVE" to enter the data you are currently working on. You can discontinue at any time then return to it when it is more convenient,

but be sure to click "SAVE" before leaving the page.

### Navigation Bar

The Navigation Bar on the left hand side of the screen provides a suggested order of data entry, but you do not have to strictly follow this order. Feel free to jump around and enter data where you need to, although there are some data dependencies.

For example, you must enter Radio System Channel information before you can enter data on the Repeater / Base Station page. The Repeater / Base Station page enables you to link Channels to Structures. If the Channels have not yet been entered, they cannot be configured on Structures.

### Help Button



Each page in CAS has a Help Button on the navigation menu on the left. If you ever need more explanation on what form fields mean, click the help button to open the CAS Manual to that topic.

## Radio Systems

### Radio Systems

**CASM Definition** - Land Mobile Radio system; an organized set of channels or talk groups that are used by an agency or group of agencies for regular communications. The channels are likely repeated on one or more towers.

Radio Systems represent one of the most important Communication Assets available to Public Safety First Responders. In particular, Shared Radio Systems with shared channels and shared talk groups is one of the most effective methods for different agencies to interoperate.

As you are entering data into CAS about your Radio System keep in mind that **entering the agency users of the system as well as agency users of specific channels and talk groups** is the most important information when it comes to analyzing interoperability.

Provided one of the agencies that you may enter data for is an "Owning" agency for a Radio System, you will follow the steps outlined below to enter data for the Radio System.

### Steps to Entering a Radio System

Click the Add New Radio System button on the Radio System page.

1. Enter a name for the system, identify an owner, and enter some high-level characteristics (define the system).
2. Enter one or more POCs for the radio system.
3. Identify other agencies that use the radio system, if applicable.

4. Enter one or more transmit and receive channels.
5. Identify which channels are used by which agencies (conventional systems only).
6. Enter one or more talk groups (trunked systems only).
7. Identify which talk groups are used by which agencies (trunked systems only).
8. Enter one or more structures (towers) and associate them to the system.
9. Identify which channels are broadcast or repeated from those structures.

If your agency does not "own" a Radio System, it may be best for you to wait for the owner to enter data for the radio system that you use. After that has been accomplished, use the Agency Usage section to identify the system and channels your agency uses.

#### **Radio Systems vs. Mutual Aid**

The CASM tool encourages you to distinguish between channels (transmit and receive) that are used for regular agency business and those that are used exclusively for interoperability or "mutual aid".

If a channel or set of channels is used for regular agency business, create a Radio System and enter those channels as part of the Radio System. If a channel is exclusively used for interoperability, has a generally recognized name, and is programmed into radios used by different agencies, consider entering this data into the Mutual Aid section. An example of a set of channels that is appropriate for the Mutual Aid section is the NPSPAC set of interoperability channels.

A channel or group of channels that is used exclusively for mutual aid should be initiated in the Mutual Aid section. The data and format is very similar to the Radio System section, and after you associate your agency to that mutual aid channel, enter the transmit and receive frequencies, you can associate these channels to tower sites and repeater base station equipment that you own.

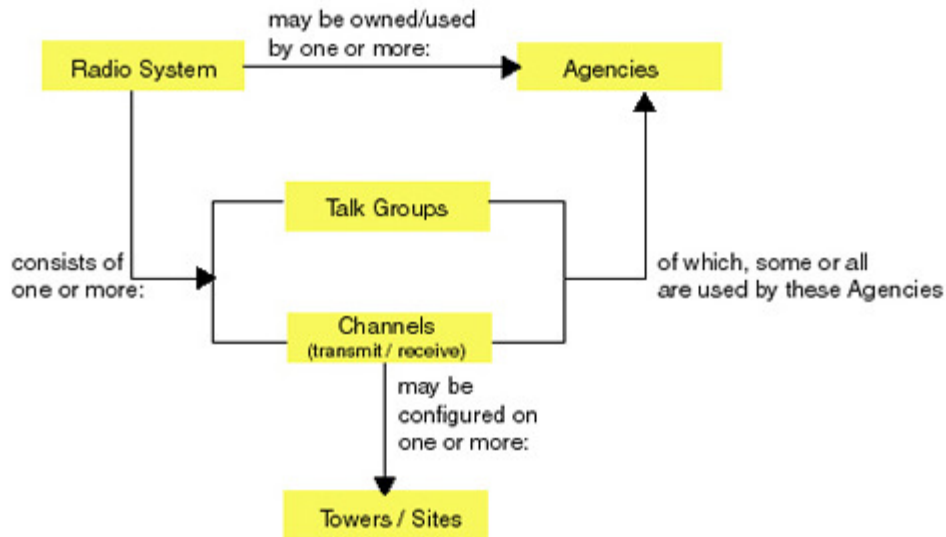
#### **What is your Goal?**

If your goal for entering data into CASM is to be able to analyze interoperability and generate the TICP report, it is not necessary to enter the data on structures and repeater base stations. You may omit Steps 8 and 9.

If your goal is to complete the data entry so that you can visualize the towers and how they are configured in CASM, include Steps 8 and 9.

#### **Data Organization for Radio Systems**

This diagram of Radio System data relationships may assist you in understanding how the data you enter is related.



## Defining a Radio System

### Step 1: Define the Radio System

From the Radio System Page, click the Add New Radio System button

1. Enter a name for the radio system.
2. Identify the owning agency for this radio system.
3. Enter data on the page as appropriate.
4. When you come to the end of the page, click "SAVE" to save your selections.

#### **Tip!** Selections make a Difference

Some of the selections you make on this page will impact the type of data you can enter in subsequent steps. Here are the important things to know about this page:

#### **System Type: Conventional, Trunked or Both**

If you select "Conventional" you will be able to enter channels (transmit/receive), but unable to enter talk groups for this system. If you have talk groups to enter, be sure to select "Trunked" or "Both".

All system types can enter channel (transmit and receive frequency) information, but for trunked systems, this channel information is not included in computing interoperability. If you do not intend on entering data on towers for your trunked system, you may skip Step 4, and move on to Step 5.

#### **Analog or Digital : Analog, Digital or Both**

When the P25 Compliant selection is "None" and if you select "Analog" or "Digital", when you get to Step 4 (Channels) you will be able to enter CTCSS or CDCSS style tone information for each of the transmit and receive frequencies that you will be entering. CTCSS (continuous tone coded squelch system) is also known as, PL tone or Channel Guard, among others. CDCSS (continuous digital controlled squelch system) is also known

as DCS (digital coded squelch) or digital sub-audible tone.

When the P25 Compliant selection is "None" and if you select "Both", when you get to Step 4 ( Channels) you will be able to select to enter either of these type of tones, or to select mixed mode, which gives you the opportunity to mix CTCSS and CDCSS tones on a single channel.

#### **P25 Compliant : None, P25 Phase 1, P25 Phase 2**

If you select "P25 P1 or P25 P2" and if you select "Analog" or "Both", when you get to Step 4 (Channels) you will be able to enter either analog, digital, NAC, or mixed mode style tone information.

If you select "P25 Phase 1" or "P25 Phase 2"nd if you select "Digital", when you get to Step 4 ( Channels) you will only be able to enter NAC tone information for each of the transmit and receive frequencies that you will be entering.

#### **Optional: Enter a Latitude/Longitude**

The Communication Assets Mapping (CAM) component takes information that you enter and displays it on a map. If you want to control where icons plot on the CAM display, you may enter a latitude and longitude.

These fields are strictly optional, if you do not enter a latitude/longitude the Radio System icon will plot at a default location. If you want the Radio System icon to plot at a specific place, this is where you can enter that information.

You will be prompted to take the next step. You may chose to use the FCC Import feature, skip it, or you can click the Return button to see the Add/Edit Radio System page again.

### **Step 2 & 3: POCs and Other Agencies that use the System**

#### **Check the new menu on the left-hand side of the page.**

After saving your selections, you will see additional navigation buttons at the top left of your page. Click the [POC Information](#) button to enter information about contact persons for this system.

If you want to identify other agencies that use this system, click the [System Usage](#) button. A new page will open that enables you to indicate which other agency(s) use this Radio System. The list of agencies will be the list that you have authority to enter data for in CASM.

If you wish to import channel and tower information from the FCC database, click the [FCC Import](#) link to initiate this process. The FCC Import pages will guide you through importing channel, structure and repeater / base station information. This process takes the place of steps 4, 8 and 9. Click [Here](#) to move to the FCC Data Import tutorial information.

## **Entering Channels**

### **Step 4: Enter Channel (transmit and receive) Information**

From the menu select: Channels

Depending on how you answered the questions about Analog or Digital, P25 Compliant or not, the channel definition section will appear appropriate to those selections.

Proceed by entering a single transmit frequency, and transmit tone. The CAS tool will attempt to populate the receive frequency field if the transmit frequency is in the 700MHz, 800MHz or UHF band. You may change the receive frequency if you wish.

Enter the channel name that this channel is commonly known as. In trunked systems, this field will most likely be left empty since the names of channels are unimportant.

When you come to the end of the page, click "SAVE" to save your selection.

You will see the summary table at the bottom of the page populate with your first entry. Repeat this process to continue entering all the channels associated with your system.

**EDIT** - You may edit any of these entries by selecting "EDIT" from the summary table. The form fields will populate with the information for that particular channel. You may then make changes to the data and click "SAVE" again to store your changes.

**DELETE** - If you click the "DELETE" button from the summary table the channel will be removed from the radio system, and when other steps have been completed, will also be removed from Agencies that use this channel and from Structures where you have entered a Repeater / Base Station for this channel.

#### Step 5: Channel Usage

If you want to identify the agencies that use particular channels on this system, click the [Channel Usage](#) menu option.

**Note:** If you are entering data for a Trunked System, you will not complete this step. You will use a similar Talk Group Usage menu option after entering the Talk Groups.

#### **A Word About Channels**

From the CASM perspective it is a good idea to consider channel frequencies as a **WORKING PAIR**. The Transmit and Receive frequencies (and tones) entered on the Channels page may be entered from the perspective of a repeater or a subscriber unit, but should not be entered both ways. Select one method and stay consistent.

## Enter Talk Groups

#### Step 6: Enter Talk Group Information

From the menu select: Talk Groups

This menu option is only enabled if your radio system is trunked.

Enter the Talk Group ID and Talk Group name that this channel is commonly known as. You have latitude when entering the Talk Group ID. You may choose to enter the hex

code, or some other unique identifier for this talk group on this system.

If a particular Talk Group is programmed on all radios that may access the system, such as a system-wide, mutual aid talk group, click the "Yes" radio button next to the words "Talk Group used by all:".

When you come to the end of the page, click "SAVE" to save your selection.

You will see the summary table at the bottom of the page populate with your first entry. Repeat this process to continue entering the talk groups associated with your system.

**Tip!** Your system may have many, many talk groups. It is not necessary to enter all of them. It is most meaningful to enter the talk groups that are **shared** between agencies.

**EDIT** - You may edit any of these entries by selecting "EDIT" from the summary table. The form fields will populate with the information for that particular talk group. You may then make changes to the data and click "SAVE" again to store your changes.

**DELETE** - If you click the "DELETE" button from the summary table the talk group will be removed from the radio system, and when other steps have been completed, will also be removed from Agencies that use this talk group.

### Step 7: Talk Group Usage

If you want to identify the agencies that use particular talk groups (talk groups that are not "used by all") on this system, click the [Talk Group Usage](#) menu option.

## Entering & Selecting Structures

### Step 8: Enter and Select Structures that support your Radio System

From the menu select: Structures

#### Part 1

Examine the summary table to see if any of the structures that are listed support your radio system. We understand that a structure can and often does house multiple repeater base stations that support multiple different radio systems. It is possible that someone else has already initiated an entry for a structure that you use.

You can click the "VIEW" button to see more information about that structure and the radio systems that are already associated to it.

#### Part 2

Section 2 of this page enables you to link your radio system to the structures that are visible in the summary table above or to add new ones.

Select the names of the structures that are used by your system, then click "SAVE". Your entries will appear in a second summary table at the bottom of section 2.

If you need to enter a new structure, select the [Add New Structure](#) button at the top of

the page. A new page will appear so that you can define the structure (tower). Once you click "SAVE" on this new page, you will see the structure listing appear in the top summary table and also in your Radio System summary table in Section 2.

## About Sharing Structures

You may be concerned about "Sharing" Structures with other radio systems. If another user selects the structure that you have entered, they will be able to edit the information on the Add/Edit Structure page, but they will not be able to edit the channel information that you enter in Step 9, unless they also are owners of the same radio system you are entering.

The benefit of "sharing" structure information is that it will be possible to get a comprehensive understanding of the channels across systems that are supported by a particular site.

## Deleting Structures

You may disassociate your radio system from a structure by clicking the "DELETE" button in the summary table. This action will delete the structure and repeater base station information that may have been entered for your radio system, but will not delete the information that may be entered for another radio system on that structure.

If no other radio systems are utilizing that structure and you click the "DELETE" button, it will be completely removed from the database and will no longer be selectable.

# Entering Repeater / Base Station Information

### Step 9: Enter Repeater/Base Station data for your Radio System for each Structure

From the menu select: Repeater/Base Stations

Select the first Structure that you wish to configure.

This page enables you to link the channels (transmit and receive) that you entered in Step 4 to the structures that you entered in Step 8.

You may select multiple channels at one time. Any other data you enter, such as the name, antenna information or comments will be repeated for each channel so make your channel selections carefully. In other words, if you select a set of channels, be sure that the data you enter for antenna type or antenna height is applicable to that set of channels.

Click "SAVE" to save your selections. Your entries will appear in a summary table at the bottom of the page.

**EDIT** - You may edit any of these entries by clicking the "EDIT" button in the summary table. The form fields will populate with the information for that particular channel on that specific structure. You may then make changes to the data and click "SAVE" again to store your changes.

**DELETE** - If you click the "DELETE" button from the summary table the channel will be removed from the structure for that radio system. The channel will not be deleted from



## Repeater / Base Stations & Interoperability

The data that you have entered for how structures are configured with channels is strictly for inventory purposes. At this time, the CASM tool does not utilize this data to compute interoperability.

## Dispatch Centers

### Dispatch Centers

A Dispatch Center provides dispatching service for one or more Agencies. It may or may not also perform as a PSAP, may or may not provide console patches.

The Dispatch Center section works similarly to Gateway and Radio Cache sections. The section begins with a summary table. Only a user that is authorized to enter data for an owning Agency can edit or delete a table entry. Anyone can add a new Dispatch Center.

Examine the table to see if your Dispatch Center already appears. You may click the "VIEW" button to see more information about that item. If not, you may enter it.

### Steps to entering a Dispatch Center

Click the [Add New Dispatch Center](#) button on the Dispatch Center page

1. Enter the name of the Dispatch Center and other characteristics
2. Identify the Agencies that are served by the Dispatch Center
3. Link Dispatch Centers together (optional)

**EDIT** - The "EDIT" button will be enabled for a particular Dispatch Center if the owning agency is an agency you may add/edit data for. (A disabled button looks grey.) By clicking the "EDIT" button, a new page will appear with the details of that Dispatch Center populating the form fields. You may then make changes to the data and click "SAVE" again to store your changes.

**DELETE** - The "DELETE" button will be enabled for a particular Dispatch Center if the owning agency is an agency you may add/edit data for. (A disabled button looks grey.) By clicking the "DELETE" button you will remove the dispatch from the system entirely, including the details and associations to the agencies that are served by that Dispatch Center. It will not remove the Agencies themselves.

## Add a New Dispatch Center

## Step 1: Initiate a Dispatch Center

### From the Navigation Bar, select Dispatch Center

Once you click the [Add New Dispatch Center](#) button on the Dispatch Page, a new page will appear.

Name the Dispatch Center. Be sure to select a name that will be recognized by others in your State/Urban Area.

Select the Agency that is the "owning" (or responsible) agency for this dispatch center. Persons representing this agency are the only ones who will be able to edit this dispatch data in the future.

Proceed by entering data into the form.

### Check the menu at the top left of the page

After saving your selections, you will see three additional menu options at the top left of the page. Click the [POC Information](#) button to enter information about contact persons for this dispatch center.

**For Step 2**, click the [Associate Agencies](#) button. A new page will open that enables you to identify all the agencies that are served by this Dispatch Center.

**For Step 3**, click the [Connected Centers](#) button. A new page will open that enables you to identify other Dispatch Centers that are linked to this Dispatch Center.

### **Tip!** Selections make a Difference

One of the selections you make on this page will impact the way interoperability is computed. Here are the important things to know about this page:

#### **How many simultaneous console patches can this dispatch center support?**

CASM utilizes the answer you provide in this field for determining if this Dispatch Center can perform console patches between agencies.

If you enter "0" (the number zero), the tool will not include this Dispatch Center as an interoperability method.

If you enter a number greater than zero, the tool will include this Dispatch Center as an interoperability method if it also serves more than one agency, or is linked to another dispatch center that also serves at least one agency.

#### **Optional: Enter a Latitude/Longitude**

The Communication Assets Mapping (CAM) component takes information that you enter and displays it on a map. If you want to control where icons plot on the CAM display, you may enter a latitude and longitude.

These fields are strictly optional, if you do not enter a latitude/longitude the Dispatch icon will plot at a default location. If you want the Dispatch icon to plot at a specific place, this is where you can enter that information.

## Associate Agencies to Dispatch Center

### Step 2: Identify Agencies that are Served by a Dispatch Center

From the Add/Edit Dispatch Center page, click [Associate Agencies](#) button from the menu at the top left of the page.

The Dispatch Center name will appear at the top of the page.

Select the Agency(s) that are served by this Dispatch Center. If you select multiple agencies, the entries you make in the other fields, including the notes will be attributed to each agency.

Be sure to include the owning agency as an agency served by this dispatch.

Hint: it is a good idea to not enter a Note if you are selecting multiple agencies unless you really want that Note replicated for each agency you select.

Click "SAVE" to associate these agencies to the dispatch center.

A summary table will appear that shows the agencies you have entered.

**EDIT** - You may edit any of these entries by selecting "EDIT" from the summary table. The form fields will populate with the information for that particular agency. You may then make changes to the data and click "SAVE" again to store your changes.

**DELETE** - If you click the "DELETE" button from the summary table the agency will be removed from the dispatch center, but other information about that agency will not be affected.

### **Tip!** Selections make a Difference

One of the selections you make on this page will impact the way interoperability is computed. Here are the important things to know about this page:

#### **How many agencies are associated to this Dispatch Center?**

CASM utilizes the fact that agencies are associated to a dispatch center, along with the number of simultaneous patches answer, for determining if a dispatch center can perform console patches between agencies.

If your Dispatch Center can perform at least one console patch AND serves two or more agencies it will appear as an interoperability method.

If your Dispatch Center can perform at least one console patch, but only serves a single agency, it will not be considered an interoperability method, unless it is also connected to another dispatch (Step 3).

If your Dispatch Center serves no agencies, it will not appear as an interoperability

method, regardless if you have indicated that it can perform console patches.

## Link Dispatch Centers

### Step 3: Link Dispatch Centers together

From the Add/Edit Dispatch Center page, click [Connected Centers](#) button from the menu at the top left of page

The Dispatch Center name will appear at the top of the page.

Select the name of other Dispatch Centers that this Dispatch Center is permanently linked to.

If other dispatch centers have not been initiated by their owning agencies, this step may need to wait until that data entry is completed. You can initiate a dispatch center for another agency, but it is not recommended.

**Tip!** CASM is a collaborative tool, if you link your Dispatch Center to another Dispatch Center, this data will appear to the owner of the other Dispatch Center. You may want to coordinate this process with the other Dispatch Center.

Click "SAVE".

A summary table will appear that shows the dispatches you have linked to.

**DELETE** - If you click the "DELETE" button from the summary table the Dispatch Center will be un-linked from your Dispatch Center, but other information about that Dispatch Center will not be affected.

### **Tip!** Selections make a Difference

One of the selections you make on this page will impact the way interoperability is computed. Here are the important things to know about this page:

#### **Is at least one Dispatch Center linked to your Dispatch Center?**

CASM utilizes the linkages of dispatch centers in determining if a dispatch center can perform console patches between agencies.

If your Dispatch Center serves at least one agency AND the dispatch center is linked to any other dispatch center that also serves at least one agency, it will appear as an interoperability method.

## FCC Data Import

### FCC Data Import details

This feature enables you to draw upon the FCC database to import channels, structures and repeater / base station information into the CASM database for a

radio system that your agency owns or is responsible for.

In each step you are able to review, edit and select the specific channels, structures or repeater / base station information that you want to import.

Before you can start, however, you must define a Radio System. See [Step 1](#) in the Radio System data entry section of this Tutorial for more information. Once the system characteristics are defined you may click the [FCC Import](#) menu option.

Here are the steps:

1. Enter a valid FCC call sign or use the Advanced Search feature to query the database for a call sign. If the selected call sign is found in the FCC database, you will be presented with the licensee information so that you can confirm that the correct data has been identified.
2. [Link](#) Click the Channel Information link to go to the import channels page.
3. [Link](#) Click the Structure Information link to go to the import structures page.
4. [Link](#) Click the Repeater / Base Station Information link to go to the import repeater / base station page.

As you visit each link and import data, the FCC Data Import page will track your progress. If the call sign has been imported before for this Radio System, you will see the date of last import and by whom it was imported.

Data that is entered through the FCC Data Import process is always editable from the regular CAS forms.

## FCC Data Import: Select Call Sign

### Step 1: Select Call Sign

From the menu select: FCC Import

The FCC Data Import window will appear. Enter the FCC call sign that includes channel and/or structure data you wish to import into the CASM database.

**Tip!** You can enter data from multiple call signs for a single Radio System by repeating Steps 1-4.

**Radio System: Bowman Lake EMS System**

**FCC Data Import**

**Instructions:** Enter the FCC Call Sign that you wish to Import and associate FCC data to the given Radio System. Click the Search Button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

**Notes:** Currently the FCC Data is being limited to Location Type Code 'F' - Fixed. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

**Advanced Search**

Call Sign:

**Search** **Reset**

**Latest FCC Data Download:** 12/03/2007 at 02:21.  
This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS database. This data is downloaded and imported every Sunday night.

**Previously Imported Call Signs (0)**

Call Sign	Channels Imported Date	Structures Imported Date	Repeater/Base Station Imported Date
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[CAS opening FCC Data Import window]

Make sure that the Radio System listed is the one you wish to import data for.

Enter your FCC Call Sign, click "SEARCH"

If the Call Sign you have entered is found in the FCC database you will be shown the Licensee information so that you can confirm that you have indeed pulled up the correct data.

The screen will look like this:

**Radio System: Bowman Lake EMS System**

**FCC Data Import**

**Instructions:** Enter the FCC Call Sign that you wish to Import and associate FCC data to the given Radio System. Click the Search Button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

**Notes:** Currently the FCC Data is being limited to Location Type Code 'F' - Fixed. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

**Advanced Search**

Call Sign(s) (144):

**Search** **Reset**

**Your Call Sign, KCN681, has been found. Please refer to the below information to confirm the correct Call Sign has been entered:**

**Licensee:** CALIFORNIA, STATE OF  
**Attention Line:** GENERAL SERVICES DEPT  
**Address:** 601 SEQUOIA PACIFIC BLVD  
SACRAMENTO, CA 958140282

**Import Procedure:**  
[Channel Information](#)  
[Structure Information](#)  
[Repeater / Base Station Information](#)

**Last Import Date: (By)**

**License Status:** A - Active  
**Expired Date:** 08/24/2014  
**Canceled Date:**

**Empty column here indicates that data has not been imported from this call sign yet.**

**Latest FCC Data Download:** 12/03/2007 at 02:21.  
This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS database. This data is downloaded and imported every Sunday night.

**Previously Imported Call Signs (0)**

Call Sign	Channels Imported Date	Structures Imported Date	Repeater/Base Station Imported Date
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Alternatively, you may use the Advanced Search feature to locate a Call Sign.

Click the Advanced Search button. A set of search criteria will be presented. Enter some search parameters and click "SEARCH". Search results will be presented in the Call Sign form field. Select a Call Sign from the list and you will be able to confirm that you have selected the correct data.

## FCC Data Import: Import Channels

### Step 2: Import Channel Information

[Link](#) Click the Channel Information link

**Radio System: Bowman Lake EMS System**

**FCC Data Import**

**Instructions:** Enter the FCC Call Sign that you wish to Import and associate FCC data to the given Radio System. Click the Search Button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

**Notes:** Currently the FCC Data is being limited to Location Type Code 'F - Fixed'. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

**Advanced Search** Call Sign(s) (144):

**Your Call Sign, KCN681, has been found. Please refer to the below information to ensure the correct Call Sign has been entered:**

**Licensee:** CALIFORNIA, STATE OF  
**Attention Line:** GENERAL SERVICES DEPT  
**Address:** 601 SEQUOIA PACIFIC BLVD  
SACRAMENTO, CA 958140282

**License Status:** A - Active  
**Expired Date:** 08/24/2014  
**Canceled Date:**

**Import Procedure:**  
[Channel Information](#)  
[Structure Information](#)  
[Repeater / Base Station Information](#)

**Last Import Date: (By)**

**Click the Channel Information link to open the channels page**

**Latest FCC Data Download:** 12/03/2007 at 02:21.  
This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS database. This data is downloaded and imported every Sunday night.

**Previously Imported Call Signs (0)**

Call Sign	Channels Imported Date	Structures Imported Date	Repeater/Base Station Imported Date
-----------	------------------------	--------------------------	-------------------------------------

[FCC Data Import window]

The FCC Data Import Channels window will appear. Each unique transmit channel on the license will be displayed on the page.

This page gives you the opportunity to select the transmit frequencies you wish to import into CASM. Also, you may complete the description of the channel by entering the channel name, channel description and applicable transmit or receive tones (CTCSS or CDCSS tones or NAC codes).

The image below is an example of what the FCC Import Channels page will look like if there is only one transmit frequency on the license. If there are multiple transmit frequencies on the license, you will see multiple channel description sub-sections.

You can edit and import all unique transmit frequencies at one time by reviewing the data on this page and making sure that the "Update" checkboxes are selected. Any transmit frequencies you wish to not import can be omitted from import by de-selecting the

"Update" checkbox.

Click "SAVE" once your selections and edits are complete.

The screenshot shows the 'Radio System: Bowman Lake EMS System' window. The left sidebar contains navigation links: Radio System, PDC Information, System Usage, FCC Import, Channels, Channel Usage, Talk Groups, Talk Group Usage, Structures, Repeater/Base Stations, Data Entry Summary, Feedback, Get Help, and Close Window. The main content area is titled 'FCC Data Import: Channels - Call Sign: KCN681'. It contains instructions and notes about importing FCC data. A callout box with a yellow background and black border says 'Enter additional tone information, channel name and description for each channel'. Below this, there are two identical sections for entering channel data. Each section has a 'Please indicate the type of tones you will be entering for this Channel:' section with radio buttons for 'None', 'CTCSS', and 'CDCSS'. The 'Import' checkbox is checked. For each channel, there are fields for '\*Tx:' (frequency), '\*Rx:' (frequency), 'Tx CTCSS:', 'Rx CTCSS:', 'Channel Name:', and 'Description:'. The 'Channel Name' field is pre-filled with 'FCC-0' and 'FCC-1' respectively. The 'Description' field is pre-filled with 'Call Sign: KCN681'. At the bottom, there is a 'Select/Deselect All' checkbox, a note about required fields, and buttons for 'RETURN TO FCC IMPORT CALL SIGN LIST', 'RESET', 'SAVE', and 'Clear'.

[FCC Data Import Channels window]

After you click "SAVE" you will be returned to the FCC Data Import page.

## FCC Data Import: Import Structures

### Step 3: Import Structure Information

[Link](#) Click the Structure Information link



**Radio System: Bowman Lake EMS System**

**FCC Data Import**

**Instructions:** Enter the FCC Call Sign that you wish to Import and associate FCC data to the given Radio System. Click the Search Button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

**Notes:** Currently the FCC Data is being limited to Location Type Code 'F - Fixed'. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

**Advanced Search** Call Sign(s) (144):

Your Call Sign, **KCN681**, has been found. Please refer to the below information to ensure the correct Call Sign has been entered:

**Licensee:** CALIFORNIA, STATE OF  
**Attention Line:** GENERAL SERVICES DEPT  
**Address:** 601 SEQUOIA PACIFIC BLVD  
 SACRAMENTO, CA 958140282

**License Status:** A - Active  
**Expired Date:** 08/24/2014  
**Canceled Date:**

**Import Procedure:**  
[Channel Information](#)  
[Structure Information](#)  
[Repeater / Base Station Information](#)

**Last Import Date: (By)**

**Latest FCC Data Download:** 12/03/2007 at 02:21.  
 This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS database. This data is downloaded and imported every Sunday night.

**Previously Imported Call Signs (0)**

Call Sign	Channels Imported Date	Structures Imported Date	Repeater/Base Station Imported Date
-----------	------------------------	--------------------------	-------------------------------------

[FCC Data Import window]

The FCC Data Import Structures window will appear. Each unique structure on the license will be displayed on the page.

This page gives you the opportunity to select the structures you wish to import into CASM. Also, you may complete the description of the structure by entering the empty fields.

The image below is an example of what the FCC Import Structures page will look like if there is only one tower location on the license. If there are multiple structure locations on the license, you will see multiple sub-sections.

You can edit and import all unique structures at one time by reviewing the data on this page and making sure that the "Import" checkboxes are selected. Any structures you wish to not import can be omitted from import by de-selecting the "Import" checkbox.

**Tip!** If a structure from the license is within a half mile of a structure that already exists in the CASM database, you will be notified on the page and able to view that detail. You should confirm that this structure is indeed different from the existing one before clicking the "Import" checkbox and importing the data.

Click "SAVE" once your selections and edits are complete.

**Radio System: Bowman Lake EMS System**

**FCC Data Import: Structures - Call Sign: KJ0298**

**Instructions:** Since Structures may be used by more than one radio system, choose a name that other agencies in your state/urban area will recognize. Name the site with part of the address or landmark in it.  
**Example:** Structure is the top of City Hall building, possible name is **City Hall**.  
**Example:** Structure near Intersection of Hwy 29 and Old Elm Hwy, possible name is **29 and Old Elm**.  
**Notes:** The Structure Name field has been pre-populated with the FCC location\_name, when available, otherwise the location\_address field has been used.

☒ **Import**

\*Structure Name:

Structure Owner:

Structure Address:

\*Latitude:  (dd) :  (mm) :  (ss) (Dir)  or Decimal Equivalent

\*Longitude:  (dd) :  (mm) :  (ss) (Dir)  or Decimal Equivalent

Structure Type:

Ground Elevation (meters):  Is this a Receive Only Site? ☐ Yes ☒ No

Structure Height (meters):  (w/o appurtenances) Is there room for more antennas? ☒ Yes ☐ No

☒ **Select/Deselect All**

\*Required Field

[FCC Data Import Structures window]

After you click "SAVE" you will be returned to the FCC Data Import page.

## FCC Data Import: Import Repeaters/Base Stations

### Step 4: Import Repeater / Base Station Information

[Link](#) Click the Repeater / Base Station Information link

**Radio System: Bowman Lake EMS System**

**FCC Data Import**

**Instructions:** Enter the FCC Call Sign that you wish to Import and associate FCC data to the given Radio System. Click the Search Button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

**Notes:** Currently the FCC Data is being limited to Location Type Code 'F - Fixed'. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

**Advanced Search** Call Sign(s) (144):

Your Call Sign, **KCN681**, has been found. Please refer to the below information to ensure the correct Call Sign has been entered:

<b>Licensee:</b>	CALIFORNIA, STATE OF	<b>License Status:</b>	A - Active
<b>Attention Line:</b>	GENERAL SERVICES DEPT	<b>Expired Date:</b>	08/24/2014
<b>Address:</b>	601 SEQUOIA PACIFIC BLVD SACRAMENTO, CA 958140282	<b>Canceled Date:</b>	

**Import Procedure:**

[Channel Information](#)  
[Structure Information](#)  
[Repeater / Base Station Information](#)

**Last Import Date: (By)**

**Click the Repeater / Base Station link to complete the last step**

**Latest FCC Data Download:** 12/03/2007 at 02:21.  
 This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS database. This data is downloaded and imported every Sunday night.

**Previously Imported Call Signs (0)**

Call Sign	Channels Imported Date	Structures Imported Date	Repeater/Base Station Imported Date
-----------	------------------------	--------------------------	-------------------------------------

[FCC Data Import window]

The FCC Data Import Repeater / Base Station window will appear. This page associates the channels on the FCC license with the structures on the license.

Like the other pages, you have the opportunity to select the structures and channels you wish to associate into CASM. Also, you may complete the description of the repeater or base station by entering the empty fields.

The image below is an example of what the FCC Import Repeater / Base Station page will look like if there is only one structure and one channel on the license. If there are multiple structures and/or multiple channels on the license, you will see multiple description sub-sections.

You can edit and import all unique data at one time by reviewing the data on this page and making sure that the "Import" checkboxes are selected. Any data you wish to not import can be omitted from import by de-selecting the "Import" checkbox.

Click "SAVE" once your selections and edits are complete.

[FCC Data Import Repeater / Base Station window]

After you click "SAVE" you will be returned to the FCC Data Import page.

## CAM Operations

### Some nice tips to help you find your way around CAM

One of the most attractive features of CAM is that it is very intuitive and easy to use. Most features and views can be learned by simply clicking around the screens. Very minimal training is necessary.

#### **Tip! Click "Original View" to return the map to default view**

If you have zoomed-in or out on the map and wish to return to the default view, click the "Original View" button.

#### **Tip! Select Menu File --> Refresh CAM data**

If you are making changes in CAS and simultaneously want to view the results in CAM, you just need to select the Refresh CAM data menu option from the File menu.

This will initiate a new pull of data from the database and into your CAM application.

#### **Tip! Click the White "Asterisk" icon**

In the upper left-hand corner of the map, you may see a White Icon with an Asterisk in it. That icon represents all icons that should show on the map, based on the button selections you have made, but don't show.

When you click on the Asterisk Icon a dialog box may open that shows you a list of items.

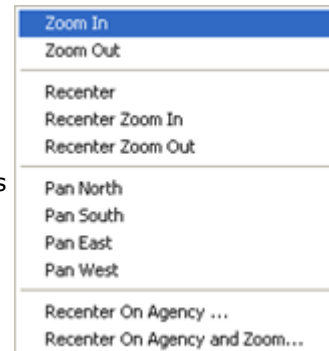
An item might be listed in the Asterisk Icon for several reasons:

1. If you have zoomed in on the map, some icons will be "off the map" until you zoom out again. While they are "off the map", you can still access them from the Asterisk Icon.

2. Icons that represent Mutual Aid always appear in the Asterisk icon.
3. Any object with a latitude/longitude that is not in the current map workspace will be "off" the map. If an icon you expect to plot does not, even if you are fully zoomed out, try changing the latitude/longitude coordinates for the object.

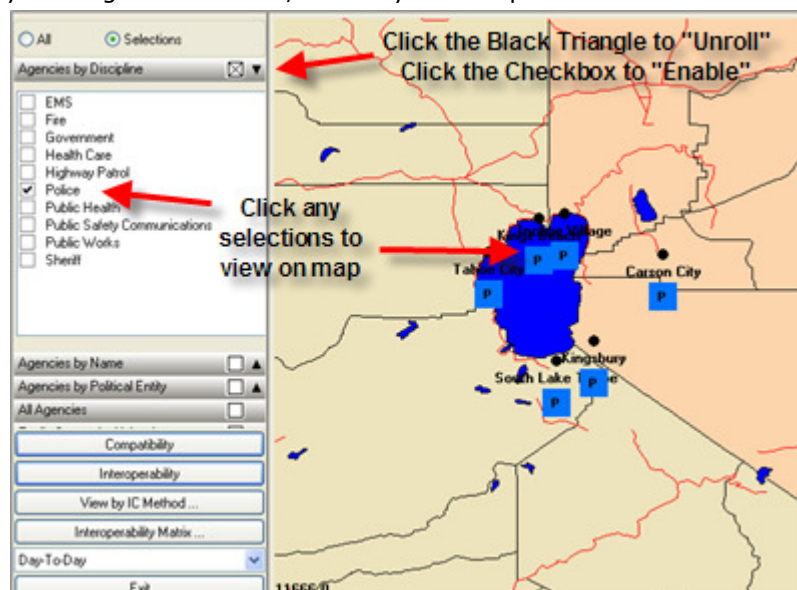
**Tip! Right-click on Map for Context menu**

With your mouse-pointer somewhere on the map, try clicking the right-mouse button. A small menu will appear that enables you to pan and zoom the map.



**Tip! Use Selections option**

To view particular Agencies, Radio Systems, or other icons on the map, click the Selections Radio Button, "unroll" the window by clicking the downward pointing black triangle, "enable" the window by clicking the checkbox, click any of the options in the small window.



**Tip! Getting Icons to Plot where you want them**

If you want Radio System, Dispatch, Tower, Gateway and Radio Cache icons to plot in particular places you can control this through the CAS data entry forms by entering latitude/longitude coordinates for that object.

In order to manipulate where Agency icons plot, you must edit the Jurisdiction latitude/longitude coordinates, since Agency icons plot under the name of their primary jurisdiction. See the main CAS Help document for more assistance.

**Tip! More Help when you need it**

From the top menu, click Help --> on Window... for more detailed explanation of how things work.

## Compatibility Tool

### Determine interoperable methods common to two or more agencies

The Compatibility Tool enables you to draw a line between two agencies on the map and find out what interoperable methods are common to those two agencies.

#### Instructions:

1. While viewing the standard Map View, be sure that Agency icons are showing on the map.
2. Click the Compatibility button. Your mouse pointer may look like a + (cross-hairs).
3. Click on one Agency icon. Now, click on another Agency icon.
4. When you make the second click the Compatibility Popup window will appear providing information about common methods for interoperability between these two selected agencies.
5. If you move this window out of the way, you will see a line drawn between the two selected agencies. The line is color-coded to the highest level of common interoperability.
6. If you close the pop-up window, you can re-open it by clicking on the line again.
7. To erase all the lines and turn off the Compatibility Tool, click the Compatibility button again.

#### **Tip!** Perform Compatibility between three or more Agencies

When using the Compatibility Tool, you can use the Right-click Map Context menu to add more Agencies to your Compatibility Results.

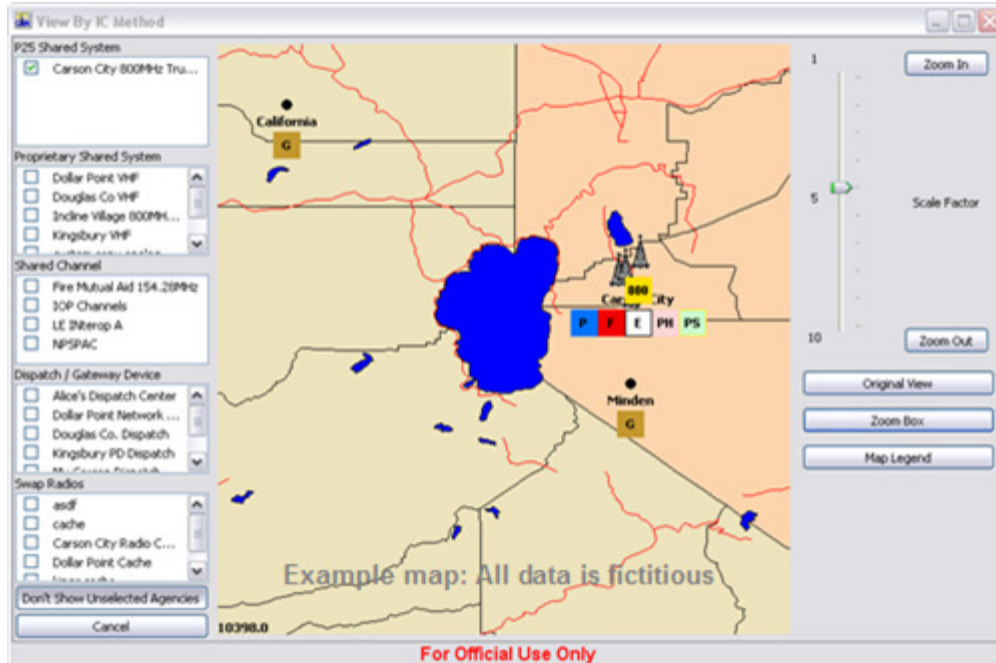
## View by IC Method

### How the View by IC Method works

The View by IC Method... button on the CAM main window opens a new map view that enables you to see the State/Urban Area Interoperability Methods sorted by the SAFECOM Interoperability Continuum Hierarchy.

Once you select any of those methods by clicking a checkbox next to the name, the agencies that utilize that communication asset will appear in color on the map. Agencies that do not utilize that particular asset will remain in grey.





[CAM View by IC Method Example]

### Click Icons to Open Pop-ups

Click any icon that appears on the map for more information about that object.

### Don't Show Unselected Agencies Button

**Tip!** If you want to clear the map view of all agencies that are in grey, click the button called "Don't Show Unselected Agencies". You can always click it again to show the unselected agencies again.

### Map Legend

## CAS & CAM - Putting it Together

### How can I get the Interoperability results I expect?

CASM computes interoperability based on the data that is entered in CAS. Data is correctable in CAS so that CAM views and interoperability results reflect the communication assets and their usage in your state/urban area that you expect to see.

With the Interoperability button clicked, Agency icons are color-coded according to the highest level of interoperability that Agency has with at least one other Agency in the State/Urban Area.

Most unexpected results come from incomplete data entry.

The information that follows should assist you in understanding how

interoperability is calculated and therefore, how to complete your data entry so that you see expected results.

#### **How to get a set of Agencies to show at the "P25 Standards-based Shared System" level**

Criteria for P25 Shared System Interoperability:

1. The set of Agencies must use the same Radio System (therefore, the radio system is "shared").
2. The Radio System Definition must indicate that the system's P25 Compliance is P25 Phase 1 or P25 Phase 2.
3. The Radio System must have Channels or Talk Groups defined, as appropriate for a conventional or trunked system, respectively.
4. The Agencies that use the system, must also use specific Channels or Talk Groups that are shared. In other words, if a single Talk Group is programmed on the radios of all Agencies that use the system, that data should be entered and will satisfy this requirement.

If all four tests are satisfied those Agencies will appear as P25 Standards-based Shared Systems interoperability level (solid green).

If just the first two tests are satisfied, the Agencies will appear as P25 Standards-based Shared Systems *Potential* (green cross-hatch).

#### **How to get a set of Agencies to show at the "Proprietary Shared System" level**

Criteria for Proprietary Shared System Interoperability:

1. The set of Agencies must use the same Radio System (therefore, the radio system is "shared").
2. The Radio System Definition must indicate that the system's P25 Compliance is "no".
3. The Radio System must have Channels or Talk Groups defined, as appropriate for a conventional or trunked system, respectively.
4. The Agencies that use the system, must also use specific Channels or Talk Groups that are shared. In other words, if a single Talk Group is programmed on the radios of all Agencies that use the system, that data should be entered and will satisfy this requirement.

If all four tests are satisfied those Agencies will appear as Proprietary Shared Systems interoperability level (solid blue).

If just the first two tests are satisfied, the Agencies will appear as Proprietary Shared Systems *Potential* (blue cross-hatch).

#### **How to get a set of Agencies to show at the "Shared Channels" level**

There are two separate sets of tests.  
Criteria for Shared Channels Interoperability:

##### Test 1

1. The set of Agencies must use the same Mutual Aid (therefore, the mutual aid is "shared", this is in the CAS Mutual Aid section).
2. The Mutual Aid must have Channels or Talk Groups defined, as appropriate for conventional or trunked, respectively.
3. The Agencies that use the Mutual Aid, must also use specific Channels or Talk Groups



that are shared. In other words, if a single Channel that is part of the mutual aid group is programmed on the radios of all Agencies that use the mutual aid, that data should be entered and will satisfy this requirement.

If all three tests are satisfied those Agencies will appear as Shared Channels interoperability level (solid Yellow).

If just the first two tests are satisfied, the Agencies will appear as Shared Channels *Potential* (yellow cross-hatch).

#### Test 2

CASM inspects the lists of channels that Agencies have indicated they have programmed in subscriber units. It will compare those channels against all other Agencies in the State/Urban Area and look for matches.

If a match is found, it will be displayed as a potential shared Channel (yellow cross-hatch).

### **How to get a set of Agencies to show at the "Gateways" level**

Criteria for Gateways Interoperability:

1. The Gateway must be configured with one or more channels or talk groups that are used by two or more agencies.
2. (For legacy data, entered prior to July 2007, the gateway may be configured with two or more agencies.)

If the test is satisfied those Agencies will appear as Gateway interoperability level (solid Silver).

#### Day to Day vs. Incident / Event

In CAS, Gateways are specified as either used on a "Day to Day" basis or only for "Incident / Event" purposes.

In CAM, there is a toggle selection for "Day to Day" and "Incident/Event". If you select "Day to Day", only Gateways that are flagged as "Day to Day" will be considered for the criteria outlined above. If you select "Incident/Event", then all Gateways will be considered for the criteria outline above.

If you don't see a Gateway that you are expecting, try changing the Day to Day to Incident/Event setting and see if that makes a difference.

### **How to get a set of Agencies to show at the "Console Patch" level, aka Gateway Potential**

Criteria for Console Patch Interoperability:

1. The Dispatch Center must be defined as able to perform at least one simultaneous console patch.

Either of the next two items must also exist, but both are not necessary.

2. The Dispatch Center must serve at least two Agencies.
3. The Dispatch Center must be linked to another Dispatch Center and each Center must

serve at least one Agency. (This is in the CAS Dispatch Center section).

If the test is satisfied those Agencies will appear as Console Patch interoperability level (cross-hatch Silver).

#### **How to get a set of Agencies to show at the "Swap Radio" level**

Criteria for Swap Radio Interoperability:

1. An Agency must own or be able to deploy a Radio Cache, or if performing a Compatibility check, be paired with an agency that owns or may deploy a Radio Cache.
2. The Day to Day vs. Incident/Event toggle must be set to "Incident / Event".

If the test is satisfied those Agencies will appear as Swap Radio interoperability level (solid turquoise blue).

## **Generate a TICP Report**

#### **Generate a TICP Report for your Urban Area**

TICP - Tactical Interoperable Communications Plan

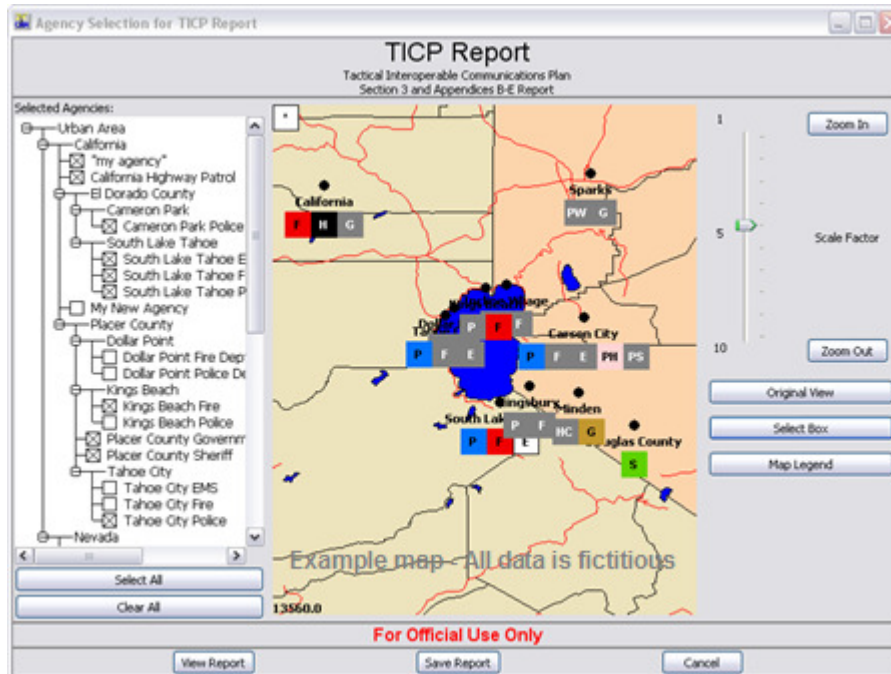
CASM will generate a pre-formatted report for Section 3 and Appendices B-E that may be added to the other components of your TICP Report.

CASM enables you to generate this portion of the TICP Report for all or a subset of Agencies that have been entered into CASM for your Urban Area.

In order to generate the TICP report, you must select the set of agencies you want to include.

#### **Instructions:**

From the main CAM window menu options, select Build Report --> TICP Report... A window similar to this will appear.



[CAM TICP Report Dialog Box]

You now have a number of options to select agencies:

1. Click the checkbox next to an agency name
2. Click an agency icon on the map, or use the select box tool
3. Click the "Select All" button
4. Double-click any jurisdiction name in the Selected Agencies listing to select all for that jurisdiction.

Selected agencies will appear in color on the map workspace when they are selected.

Once you have made the selections, you can click "View Report" which will generate the report for you to view and print.

Or, you can click "Save Report" which opens a save dialog box so that you can save the file to your computer.

**Tip!** All data in the report is based on the set of agencies you chose. For example, in Section 3.1 Swap Radios, all Radio Caches that owned/managed by any agencies of the set you selected will be included in the report. If a Radio Cache is owned by an agency not in the set of selected agencies, it will not be included on the report.

## CASM Basic Reports

**CASM offers eight pre-formatted basic reports**

- State/Urban Area Report

- Agency Report
- Radio System Report (includes Mutual Aid Systems/Channels)
- Tower Report
- Dispatch Center Report
- Gateway Report
- Radio Cache Reprt
- Point of Contact Report

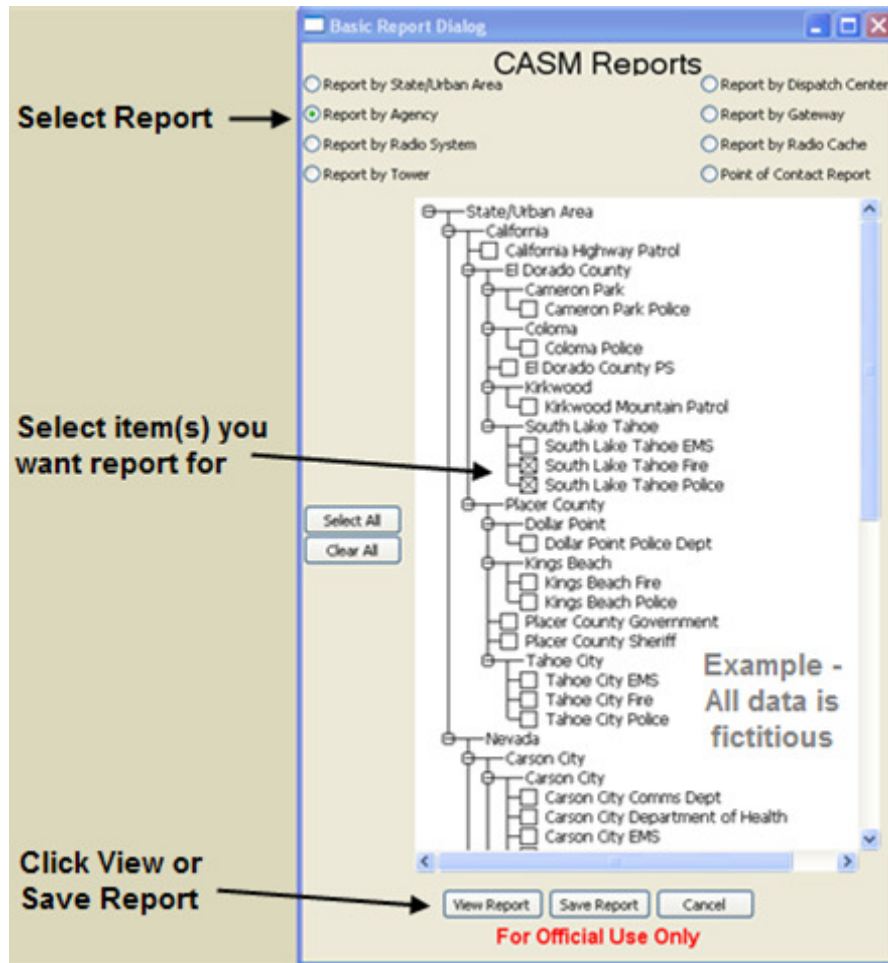
The State/Urban Area Report is a summary style report that offers listings of communication assets by category that have been entered for the State/Urban Area.

The Point of Contact Report is a directory-style report that offers a listing of all points of contact that have been entered into the CASM database for your state/urban area.

The other reports reflect a complete output of data that has been entered into CAS for a particular Agency, Radio System, Tower (structure), Dispatch Center, Gateway or Radio Cache.

**Instructions:**

From the main CAM window menu options, select Reports --> Basic Report... A window similar to this will appear.



[CAM Basic Report Dialog Box]

Once you have made the selections, you can click "View Report" which will generate the report for you to view and print.

Or, you can click "Save Report" which opens a save dialog box so that you can save the file to your computer.

CASM Basic Reports may be generated from CAM or CAS. In CAS, from the Navigation Bar, select Reports.

## CAM What-If Analysis

### The Purpose of the What-if Analysis

#### Enhances Interoperability Planning

This feature enables working groups, systems planners and communications managers to model new systems or devices that are being considered for acquisition, to optimize existing systems or configurations and to plan elimination of existing, outdated communication assets. By viewing these

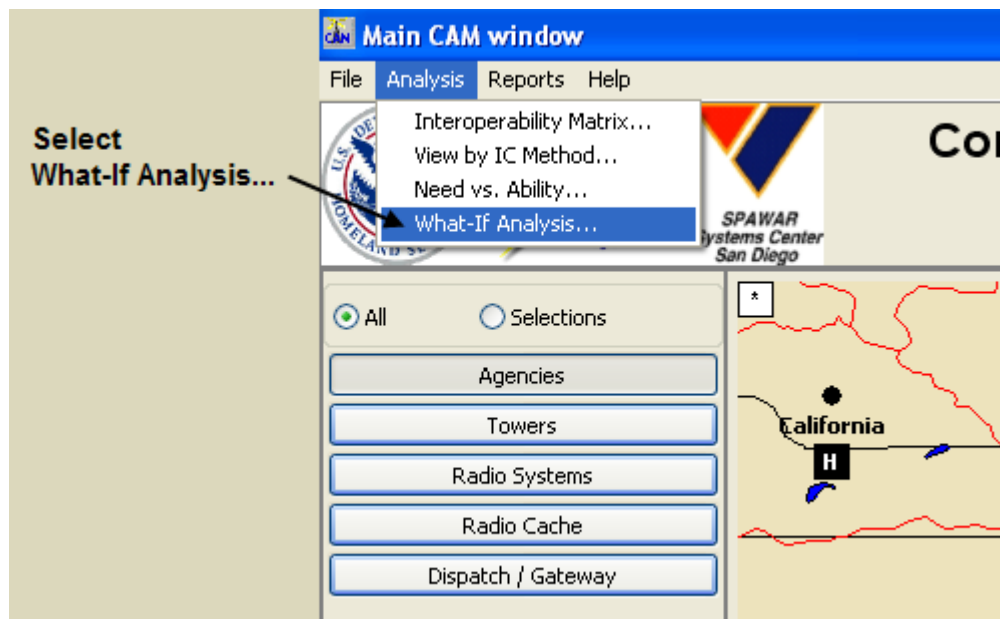
changes against the “real” data (without altering the existing data) users can visualize the change to interoperability that these additions, optimizations or eliminations will make.

### **Assists in Planning for Disaster Recovery**

Communications managers and emergency operations center managers can use this feature to model changes in communication assets that may occur as a result of a physical disaster without modifying real data. Users are able to then visualize the newest state of interoperability, based on those limited resources. With this information, managers can easily visualize the communications assets that still exist and make informed decisions about the type of resources to potentially request from outside sources.

#### **How to initiate the What-If Analysis:**

From the CAM main window, see the menu choices at the top of the page. Select the Analysis --> What-If Analysis...



The CAM What-If Workspace will open...



[CAM What-If Workspace]

## What-If: Create New Assets

### Adding Assets without impacting the "real" data

The What-If Workspace provides a place for you to add new asset data to the existing dataset without impacting the "real" data that has been entered for your state/urban area by yourself or other people.

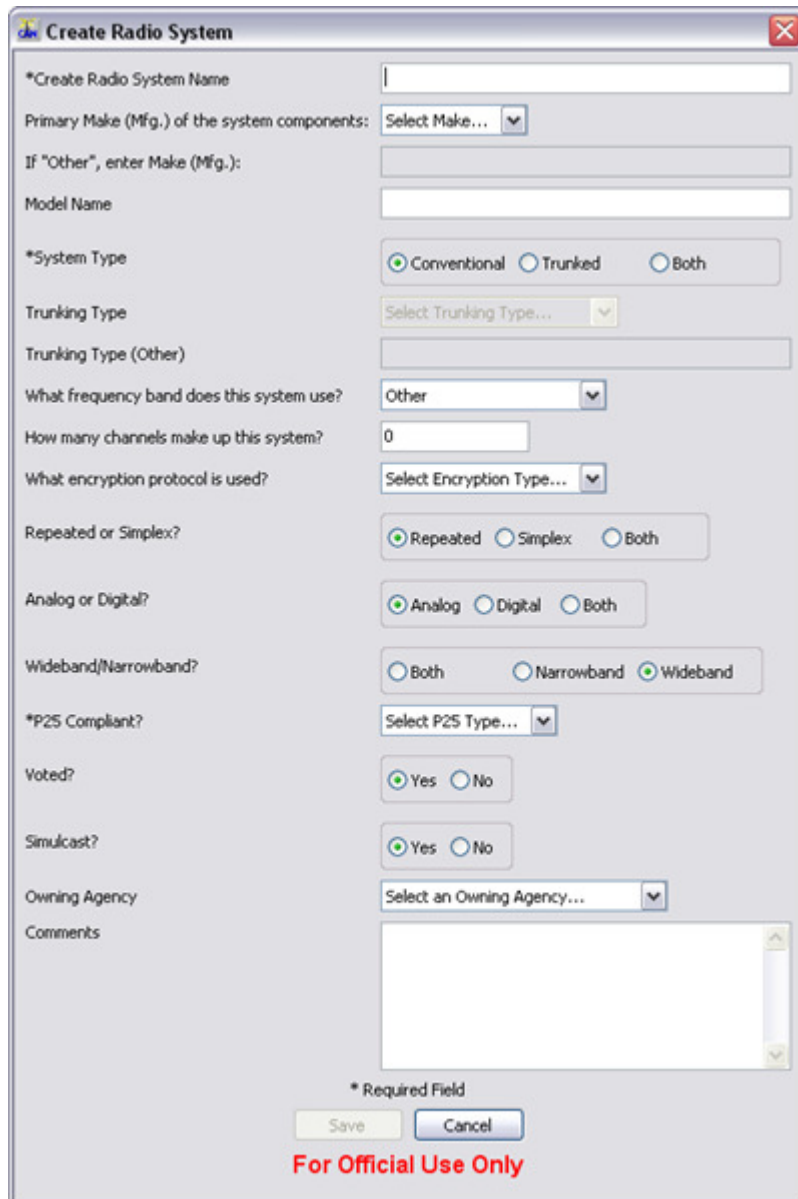
The asset data you enter in the What-If Workspace may be saved for you to view or continue to edit later, or for you to share with others, but until you share it, your changes are not visible to other people who have access to your state/urban area data. The [Save and Share](#) Tutorial page discusses this topic.

One thing you may want to do in the What-If Workspace is to create a new communication asset, such as a new Radio System, Mutual Aid Channel/System, Dispatch Center, Gateway or Radio Cache. When you create a new asset you can see how that addition changes the interoperability matrix.

The text below describes how to create a new radio system. Other communication assets are similar and less complex.

### How to Create and Configure a New What-If Radio System

From the What-If Workspace menu, select Create --> Radio System. The Create Radio System dialog box will open.



**Create Radio System**

\*Create Radio System Name:

Primary Make (Mfg.) of the system components:

If "Other", enter Make (Mfg.):

Model Name:

\*System Type: ☒ Conventional ☐ Trunked ☐ Both

Trunking Type:

Trunking Type (Other):

What frequency band does this system use?

How many channels make up this system?

What encryption protocol is used?

Repeated or Simplex? ☒ Repeated ☐ Simplex ☐ Both

Analog or Digital? ☒ Analog ☐ Digital ☐ Both

Wideband/Narrowband? ☐ Both ☐ Narrowband ☒ Wideband

\*P25 Compliant?

Voted? ☒ Yes ☐ No

Simulcast? ☒ Yes ☐ No

Owning Agency:

Comments:

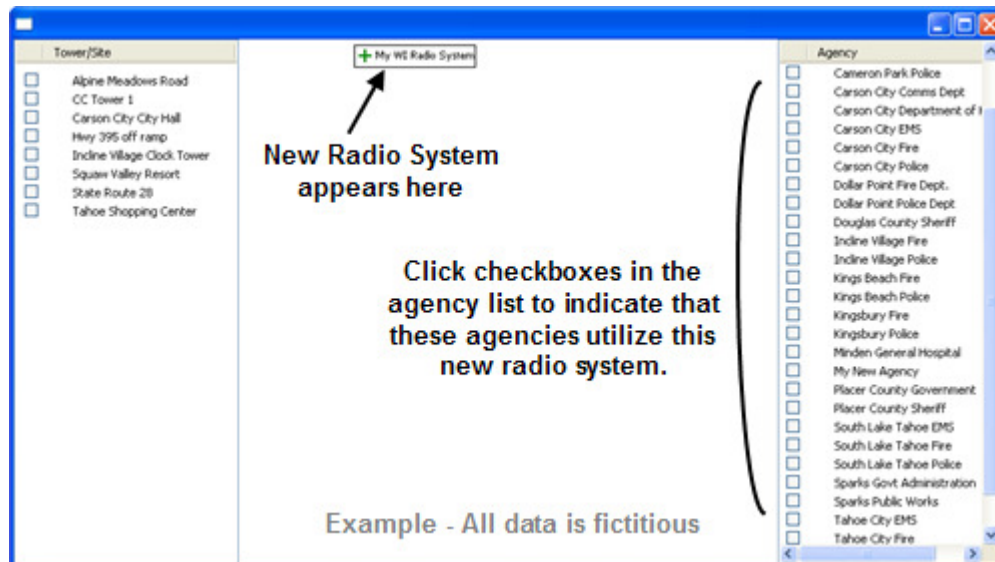
\* Required Field


**For Official Use Only**

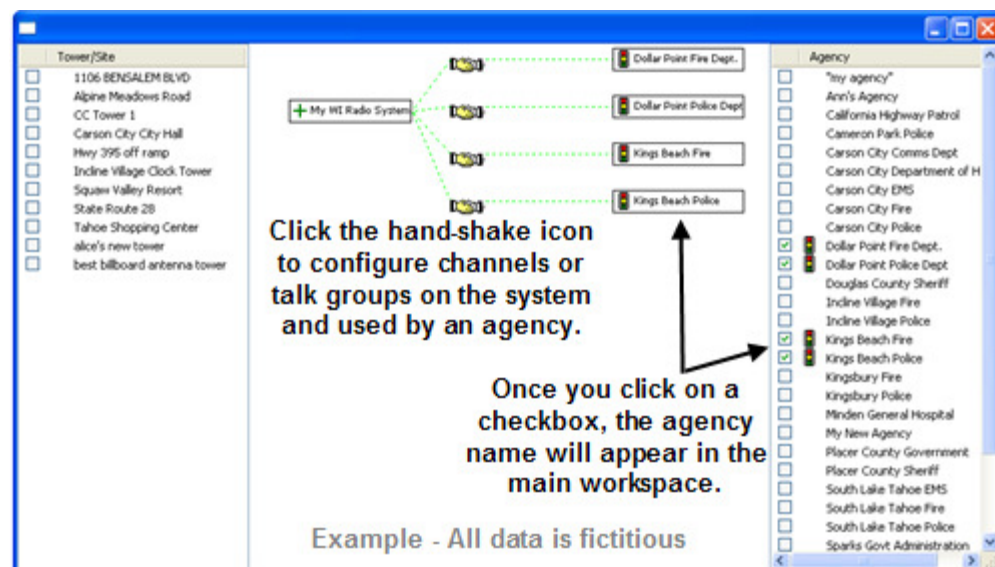
[CAM What-If Create Radio System Dialog Box]


**Step 1:** Enter a name for your new radio system and enter values for all required fields and optional fields you choose. Click "SAVE". A new dialog box will appear in the What-If Workspace. The **+** (plus icon) next to an object name identifies it as a "New" data asset.





**Step 2:** Click on checkboxes in the agency list to select the agencies that you want to indicate will be using this radio system. Those agencies will appear in the dialog box linked to the radio system. The  (stoplight icon) next to an object name identifies that the data object has "Changed".



**Step 3:** Click on the  (hand-shake icon) to open the Channel Assignment dialog box to configure channels and/or talk groups on the radio system that are used by agencies that use the system. Click the Create Channel button. Enter new transmit and receive frequencies and a channel name (and tones, if you choose). Click "SAVE".



**Create Channel**

\*Analog or Digital? ☒ Analog ☐ Digital

\*Tx  CTCSS

\*Rx  CTCSS

Channel ID


Comments

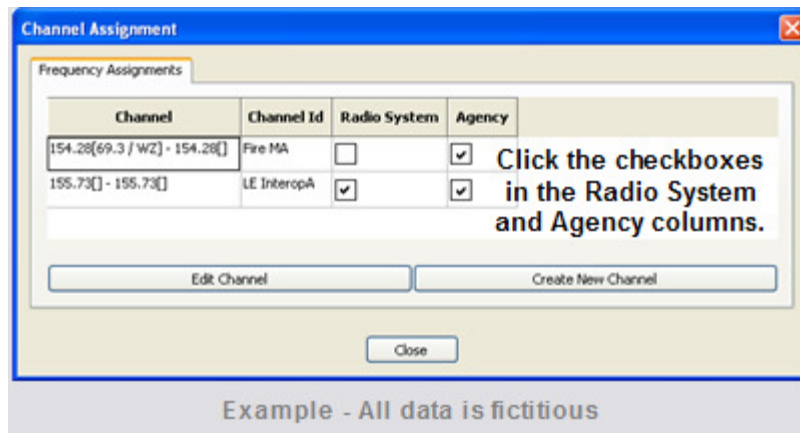
\* Required Field (EITHER the Tx field OR the Rx field is Required, but not both.)

**For Official Use Only**

[CAM What-If Create Channel Dialog Box]

**Step 4:** The new channel will appear on the Frequency Assignments channel list. Click the checkboxes in the Radio System and Agency columns. This action indicates that the channel is on the radio system and used by that agency.

Click on the other hand-shake icons  to repeat this process and link channels or talk groups to other agencies that use the radio system. You will not need to re-create a new channel or talk group once it is linked to the radio system, simply click the checkbox in the agency column to indicate that the agency uses it.



**Channel Assignment**

Frequency Assignments

Channel	Channel Id	Radio System	Agency
154.28[69.3 / WZ] - 154.28[ ]	Fire MA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
155.73[ ] - 155.73[ ]	LE InteropA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Click the checkboxes in the Radio System and Agency columns.**

Example - All data is fictitious

Now, without closing the What-If Workspace, you may return to the main CAM map window and find your new radio system icon. You may also click on the Interoperability Matrix button to see how interoperability has changed as a result of the changes you made in the What-If Workspace. See the [View Results](#) Tutorial page for more info.

**Tip!** If channels are already associated to an agency, you will see these listed in the Frequency Assignments list. They may be linked to the radio system, if

you choose.

**Tip!** If you defined the radio system as "Trunked" or "Both" (trunked and conventional) you will see a second tab in the Channel Assignment dialog box called Talk Group Assignments. The Talk Group Assignments tab works similar to the Frequency Assignments tab and enables you to create new talk groups for your new radio system.

## **What-If: Edit Existing Assets**

### **Editing existing asset data without impacting "real" data**

The What-If Workspace provides a place for you to edit existing asset data from the "real" dataset without impacting that "real" data.

You may change the characteristics of an existing asset, change the agencies that use an existing data asset, or remove a communications asset from use (make it "non-operational").

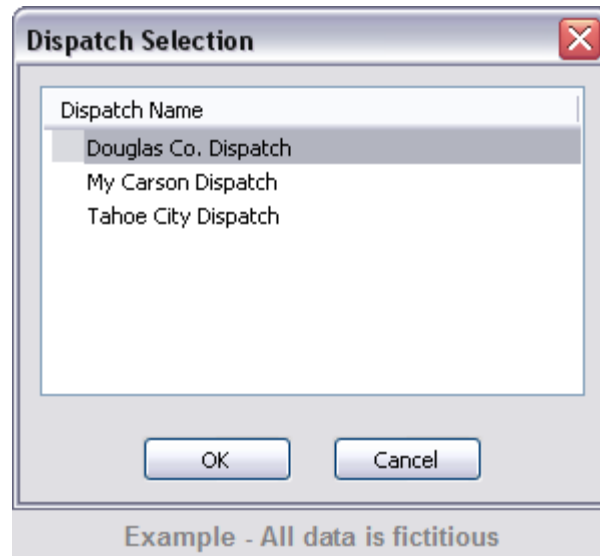
If you want to see how interoperability would change if a communication asset is eliminated, you can make that asset "non-operational". You can do this with existing "real" data or with assets you have created in the What-If Workspace.

All communication assets are editable: Channels, Console Patches, Dispatch Centers, Gateways, Mutual Aid Channels/Systems, Radio Systems, Radio Caches and Talk Groups.

The text below describes how to edit an existing dispatch center data object. Other communication assets are similar.

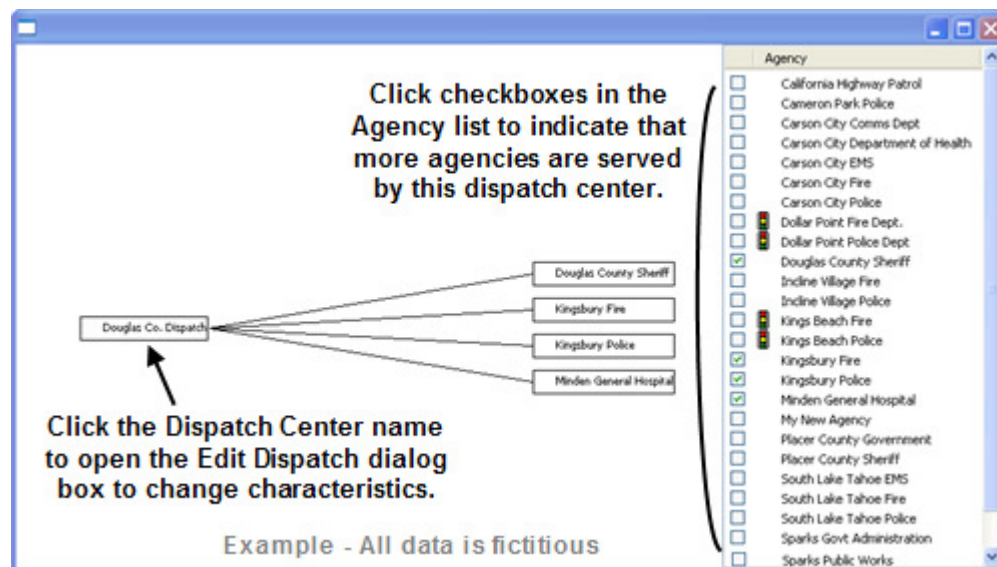
### **How to Edit and Configure an Existing Dispatch Center**


From the What-If Workspace menu, select Edit --> Dispatch. The Dispatch Selection dialog box will open.



[CAM What-If Dispatch Selection Dialog Box]

**Step 1:** Select the dispatch center you wish to edit and click "OK". A new dialog box will appear in the What-If Workspace for editing your selection. You will see the dispatch center and all agencies that are served by the



**Step 2:** Click on checkboxes in the agency list to select the agencies that you want to indicate will be served by this dispatch center. Those agencies will appear in the dialog box linked to the dispatch center. The  (stoplight icon) next to an object name identifies that the data object has "Changed".

Another option is to click on the dispatch center name to open the Edit Dispatch dialog box. This gives you the ability to change characteristics of the dispatch center or make it "Non-operational". This example will make the

**Edit Dispatch**

\*Dispatch Center Name: Douglas Co. Dispatch

Dispatch Center Owner/Responsible Agency: Douglas County Sheriff

Latitude: 38.866667

Longitude: -119.616667

Is this Dispatch Center a PSAP? ☒ Yes ☐ No

Dispatch Center Equipment Make/Model: Avtec DSPatch32

Console Make (Other):

\*How many simultaneous console patches can this Dispatch Center support?: 4

Operational? ☐ Yes ☒ No

Comments: All data in this profile is fictitious.

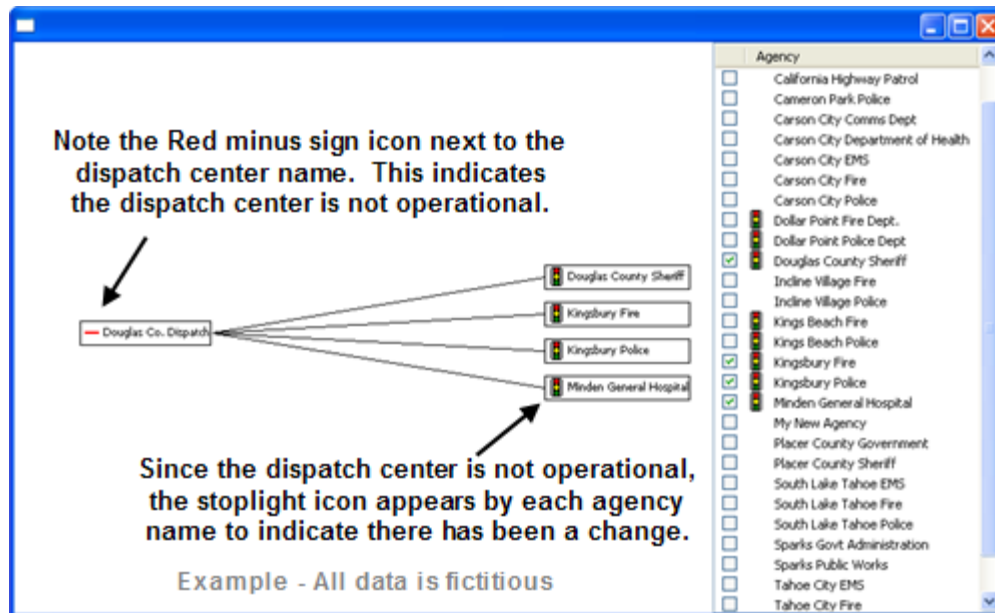
\* Required Field

Save Cancel

**For Official Use Only**  
Example - All data is fictitious

**Click the "No" radio button to make the dispatch center "Non-operational". Then click "SAVE"**

By clicking the "No" radio button and "SAVE", the dispatch center is considered "removed" from the dataset. A **—** (minus icon) next to the name indicates that this asset is no longer functioning and is not considered in the interoperability analysis.



Now, without closing the What-If Workspace, you may return to the main CAM map window and find your dispatch center icon. It will still appear on the map, but will not be considered in the interoperability analysis. You may click on the Interoperability Matrix button to see how interoperability has changed as a result of the changes you made in the What-If Workspace. See the [View Results](#) Tutorial page for more info.

**Tip!** You may create a new dispatch center, then edit it and make it non-operational. This action will permanently delete the new data object from the What-If dataset. If you make an existing data object non-operational, you may return to the edit dialog box and make it operational again by clicking the Operational "Yes" radio button and then clicking "SAVE".

**Tip!** If a dispatch center can make one or more simultaneous console patches it is considered in the interoperability analysis. If the simultaneous console patch value is zero, it is not considered an interoperability method.

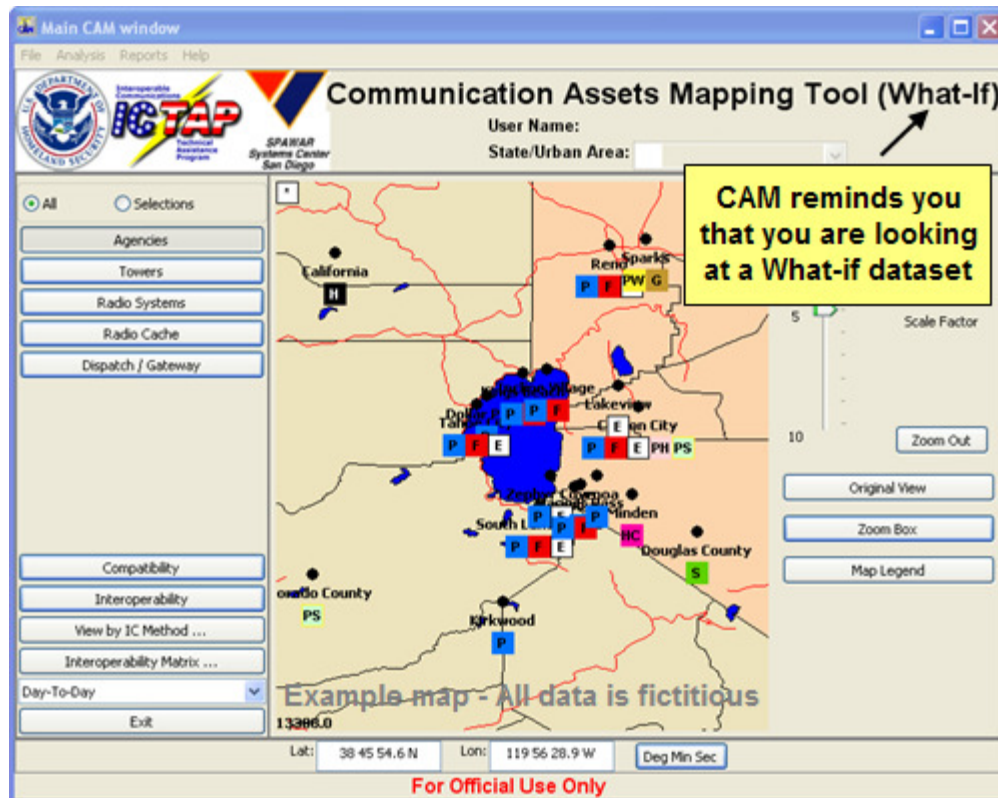
## What-If: View Results

### Creating and editing Communication Assets in What-If Workspace

The most exciting aspect of creating and editing communication assets in the What-If Workspace is to see how these changes impact the interoperability picture in your state/urban area.

#### Standard CAM Map Workspace

Without closing the What-If Workspace, return to the CAM Map main window. You will notice that the window reminds you that you are in the What-If Analysis mode.




[CAM main window in What-If Analysis mode]


## CAM Popups

You can use all the regular CAM operations on the main window while in What-If Analysis mode. You will notice that where you have made changes in the dataset, your changes are indicated with plus icons, minus icons and stoplight icons on all CAM popups. Here is an example of the Agency Interoperability popup after making a single change.



## Agency Interoperability Information (What-If)

- For Official Use Only
- Agency Name:  Dollar Point Police Dept
 

The stoplight icon indicates that there has been a change to the agency.
  - Potential Interoperability Methods for Use:
    - P25 Standards-based Systems: Not Supported
    - P25 Standards-based Systems, potential: Not Supported
    - Proprietary Shared Systems
      -  [My Wl Radio System](#)

The plus icon next to the new radio system to indicate it is new.

        - 155.730000[] - 155.730000[]
    - Proprietary Shared Systems, potential: Not Supported
    - Shared Channels
      - [IOP Channels](#)
        - ul1 - unlimited hailing
    - Shared Channels, potential
      - [NPSPAC](#)
      - 154.100000[\$999] - 155.100000[\$ABC]
      - 156.200000[] - 157.200000[]
      - 453.400000[CSQ / None] - 458.400000[CSQ / None]
      - 453.200000[CSQ / None] - 458.200000[CSQ / None]
      - 857.462500[] - 812.462500[]
      - 155.730000[] - 155.730000[]
      - 156.100000[67.0 / XZ] - 157.100000[67.0 / XZ]
      - 121.100000[CSQ / None] - 121.400000[103.5 / 1A]
  - Gateways: Not Supported
  - Gateways, potential
    - [Dispatch Center](#)
- Other, existing data remains unchanged.

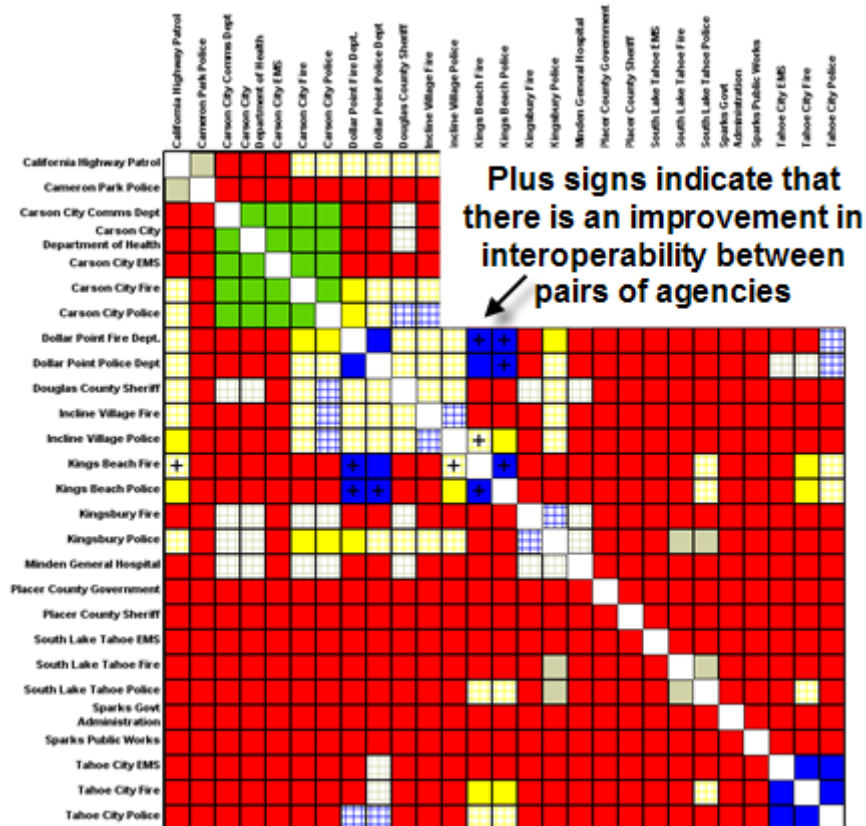
Example - All data is fictitious

## Interoperability Matrix

The Interoperability Matrix reveals the most interesting information while performing What-If Analysis. To view your overall changes, click the Interoperability Matrix button, select the agencies you wish to include, then click "VIEW".

The matrix will appear. Where there are improvements or degradations to the highest level of interoperability between pairs of agencies, you will see a plus or minus on the intersection box. When you click on an intersection box, the Compatibility Popup will show you all changes that have impacted a particular pair of agencies.





Example - All data is fictitious

[CAM Interoperability Matrix What-If Analysis mode]

## Reports

You may also print a modified version of the Basic Reports while in What-If Analysis mode.

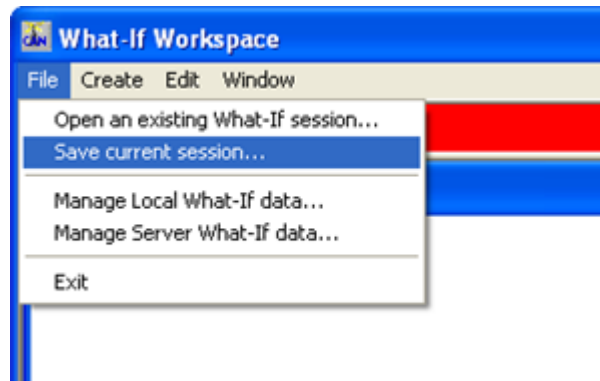
The TICP Report is not available during What-If Analysis.

## What-If: Save and Share the What-If Session

### Saving your What-If Session...

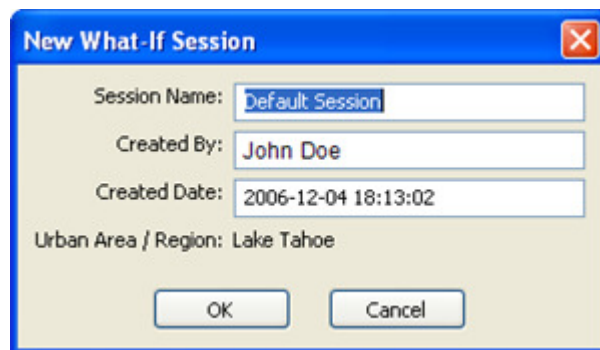
While you are working in the What-If Workspace you may occasionally save your work by clicking the File menu --> Save Current Session...

This action saves the changes you have made into a local file on your computer. By saving your work, you are able to re-open a session at a later time in order to continue working on it or to show it to others.



[CAM What-If File Menu Options]

The New What-If Session save dialog box enables you to name your session in the Session Name box, or you may accept the Default Session name.



[CAM New What-If Session Save Dialog Box]

In order to open a previously saved What-If session, from the main CAM window, choose File --> What-If Analysis... Once the What-If Workspace is open, select File --> Open an Existing What-If session... A new dialog box will open showing you any saved What-If sessions you may have.

**Tip!** Saving your What-If session saves your changes plus a snap-shot of the existing data from that moment in time. When you re-open your what-if session days later, changes may have occurred to the "real" data, but these will not be merged into your saved what-if session dataset.

### Sharing your What-If Session...

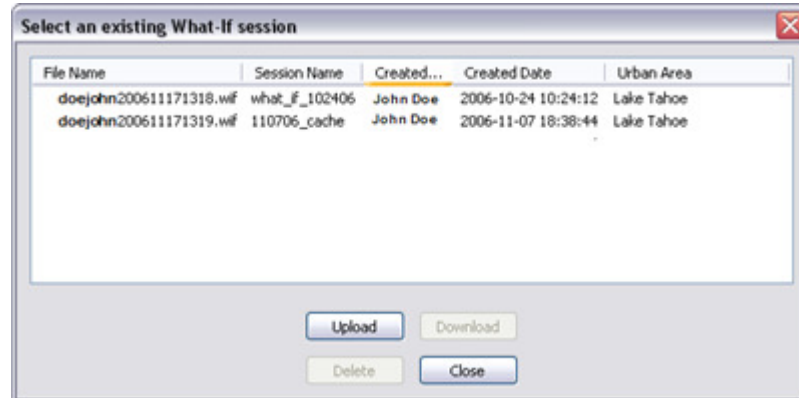
There are two ways you can share your What-If session with another user, however, the other user must already have a User ID and Password for the CAM application and have access to your state/urban area data.

#### Option 1: Uploading your What-If session to the CASM Server

This option makes your What-If session available to all users who have access to your state/urban area data.

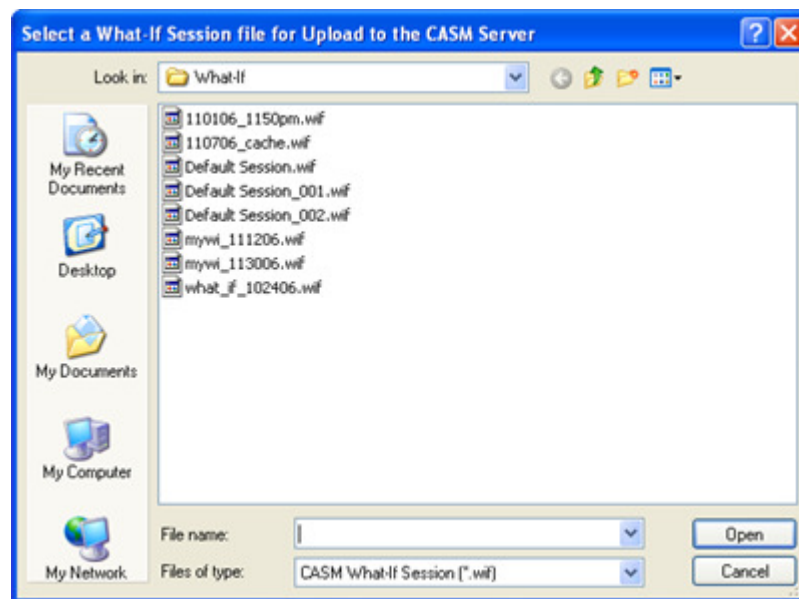
**Step 1:** From the What-If Workspace, select File menu option --> Manage Server What-If data. A dialog box will appear and will show you all What-If sessions that have been

uploaded to the server by other users in your state/urban area.



[CAM What-If Session Manage Server What-If data]

**Step 2:** Click the "UPLOAD" button. This will open a new dialog box which shows you all the What-If sessions you have previously saved locally on your computer. Select the one you wish to upload and click "OPEN".



Your selection will be stored on the CASM server and available to anyone who has access to your state/urban area.

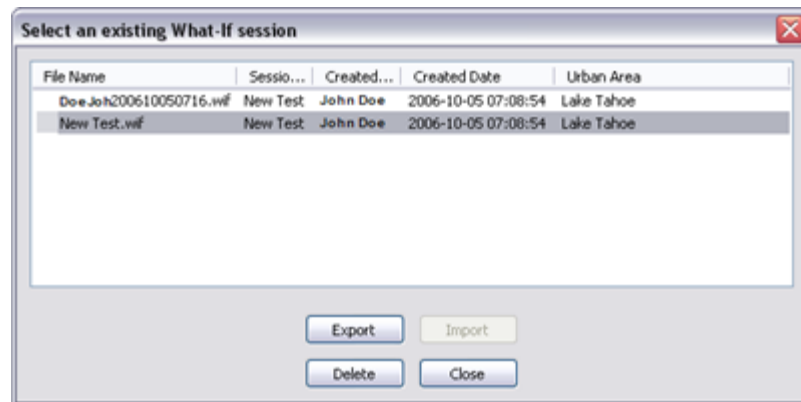
**Step 3:** To instruct someone to access your stored What-If session, provide them the name of your session and these steps:

1. Open the CAM application. From the File menu --> select What-If Analysis...
2. From the What-If Workspace, File menu --> select Manage Server What-If data...
3. Select the What-If session by name. Click the "DOWNLOAD" button.
4. Your .wif file will now be inserted into their CAM application

## Option 2: Export your What-If session and give it personally

This option enables you to distribute your What-If session to only the users you wish.

**Step 1:** From the What-If Workspace, select File menu option --> Manage Local What-If data. A dialog box will appear and will show you all What-If sessions that you have saved on your computer.



[CAM What-If Session Manage Local What-If data]

**Step 2:** Select the one you wish to export. Click the "EXPORT" button. This will open a new dialog box which enables you to navigate your own computer directory so that you may save the .wif file where you can find it, such as the Desktop. You can then burn the file to a CD or transfer it any other way you may like.

**Step 3:** After you send the .wif file, instruct the recipient that they should do the following steps:

1. Save the .wif file onto their computer in a directory they can find.
2. Open CAM application. From the File menu --> select What-If Analysis...
3. From the What-If Workspace, File menu --> select Manage Local What-If data...
4. Select the "IMPORT" button. Navigate to the directory where they stored the .wif file. Click "OPEN".
5. Your .wif file will now be inserted into their CAM application

## What-If: End the What-If Session

### Ending your What-If Session

You may end your What-If session at any time by clicking the File menu option --> Exit.

If you have not saved your changes, you will be prompted to do so. You may opt to not save your changes by clicking "CANCEL" when the alert box comes up.

Upon ending your session, the CAM main window will re-load with fresh data from the CASM database and will no longer have the words "What-If" in the window header.

## **CAM Need vs. Ability Analysis**

### **The Purpose of the Need vs. Ability Analysis**

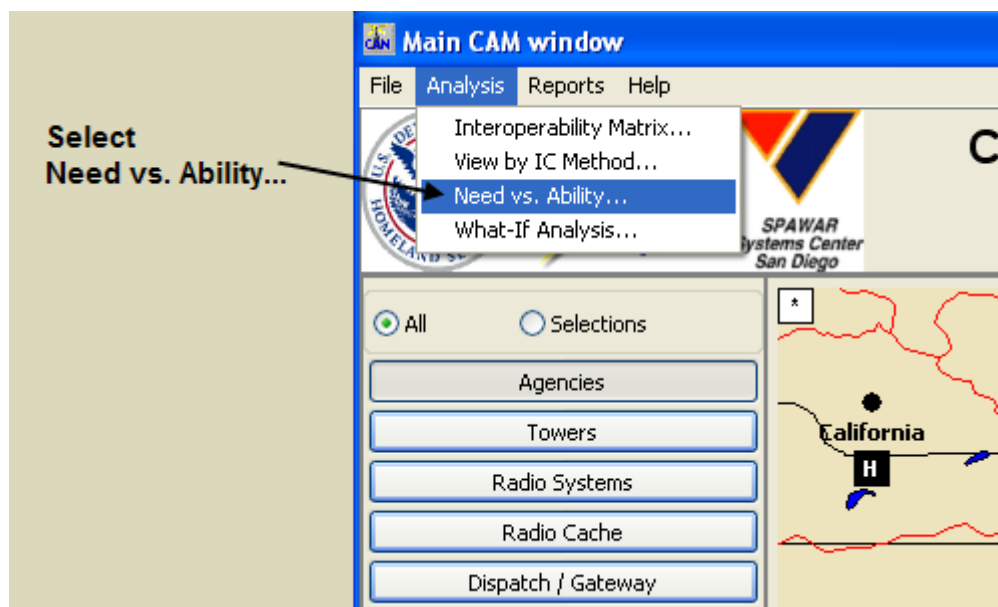
#### **Identify Interoperability Gaps**

This feature enables you to compare the highest level of "need to talk" to the highest level of "ability to talk" between agency pairs in your state or urban area.

The visualization highlights agency pairs with the highest need and the least ability so that planners can prioritize interoperability solutions.

### **How to initiate the Need vs. Ability Analysis:**

From the CAM main window, see the menu choices at the top of the page. Select the Analysis --> Need vs. Ability...



## **Need vs. Ability: Select Agencies**

### **Two Ways to Select Agencies**

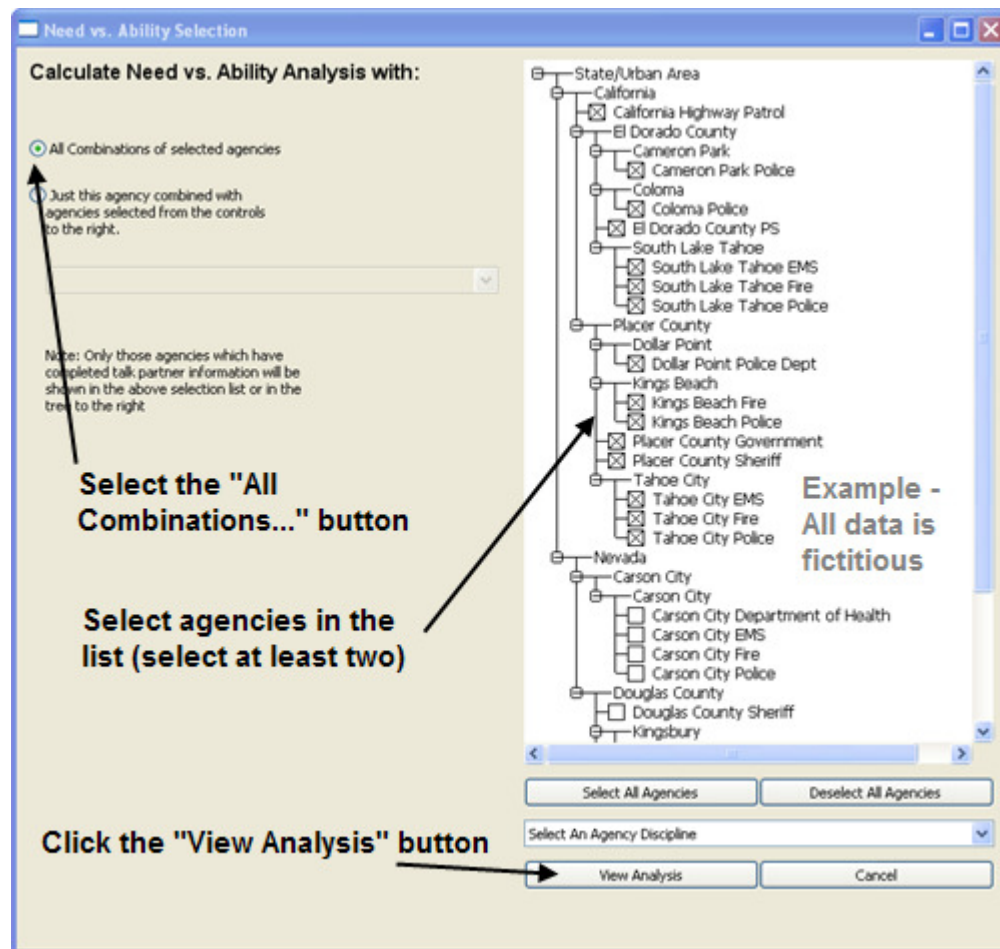
The Need vs. Ability Selection window enables you to select agencies in two main

ways:

1. All Combinations... Select a set of agencies and the analysis will be generated by comparing every agency to one another. Since this option generates a full set of unique agency pairs, it gives you insight into the state/urban area as a whole.
2. Just this agency... Select a single agency and a set of agencies and the analysis will be generated by comparing that single agency to the other agencies in the set. Since this option generates specific agency pairs, it gives you insight into the interoperability gaps for the selected agency.

### How to Select All Combinations

This option is the default option on the page.

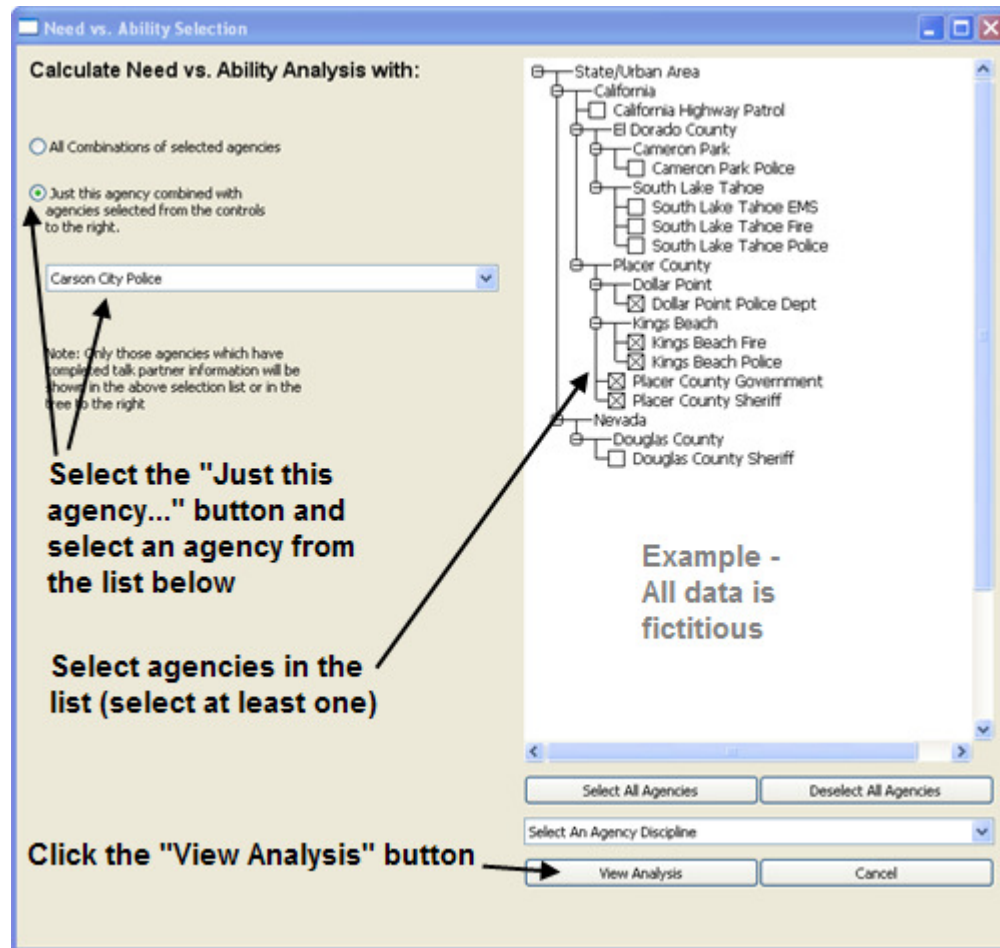


[CAM Need vs. Ability Selection Dialog Box]

The agencies that appear in the white selection box are all the agencies that have "Talk Partner" data entered for them. If an agency does not have Talk Partner data entered for them, they will not appear in the list. In CAS, the level of "need to talk" is entered in the Agency Usage section, on the Talk Partner page.

## How to Select a Single Agency

This option is the alternate option on the page.



[CAM Need vs. Ability Selection Dialog Box]

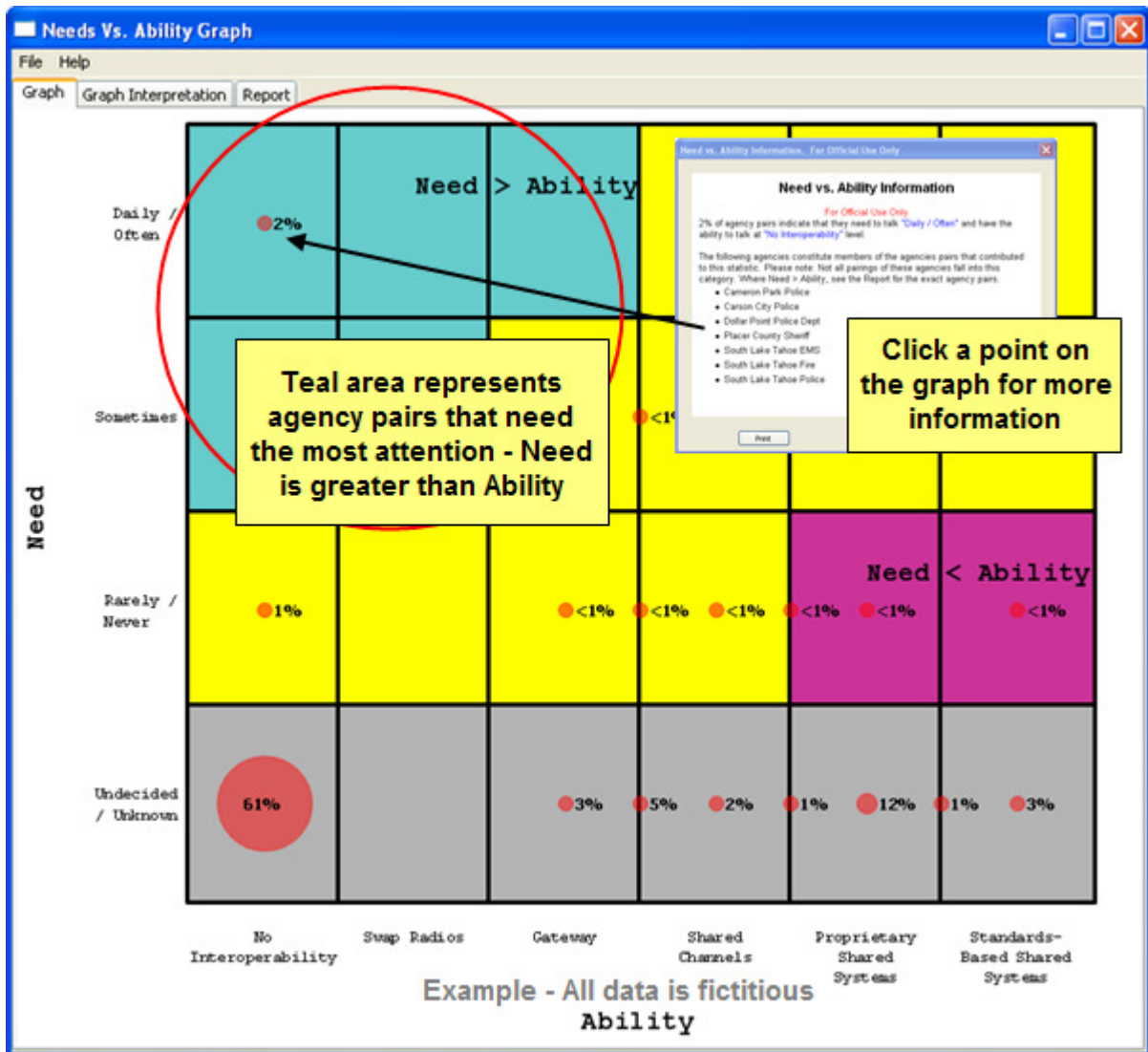
The agencies that appear in the single selection list are all the agencies that have "Talk Partner" data entered for them. The agencies that appear in the white selection list are those agencies that have Talk Partner data for the selected agency only.

## Need vs. Ability: View Results

### Interactive Graph

The Need vs. Ability Interactive Graph presents a visualization that shows the percentage of agency pairs, based on the unique agency pairs from the agencies selected, where each pair's highest "level of need" is compared to their highest "level of ability".





[Need vs. Ability Interactive Graph]

Agency pairs with the highest\* level of need (Daily/Often) with the least ability (No Interoperability) are reflected in the top left-hand square of the graph. Agency pairs where need is greater than ability appear in the teal-colored squares.

Agency pairs where their highest level of need is approximately equal to their highest level of ability appear along the diagonal, in the yellow-colored squares.

Agency pairs where their highest level of ability is greater than their highest level of need appear in the lower right-hand corner, in the magenta-colored squares.

Agency pairs where there is no level of need identified with each other appear in the grey-colored squares at the bottom of the graph.

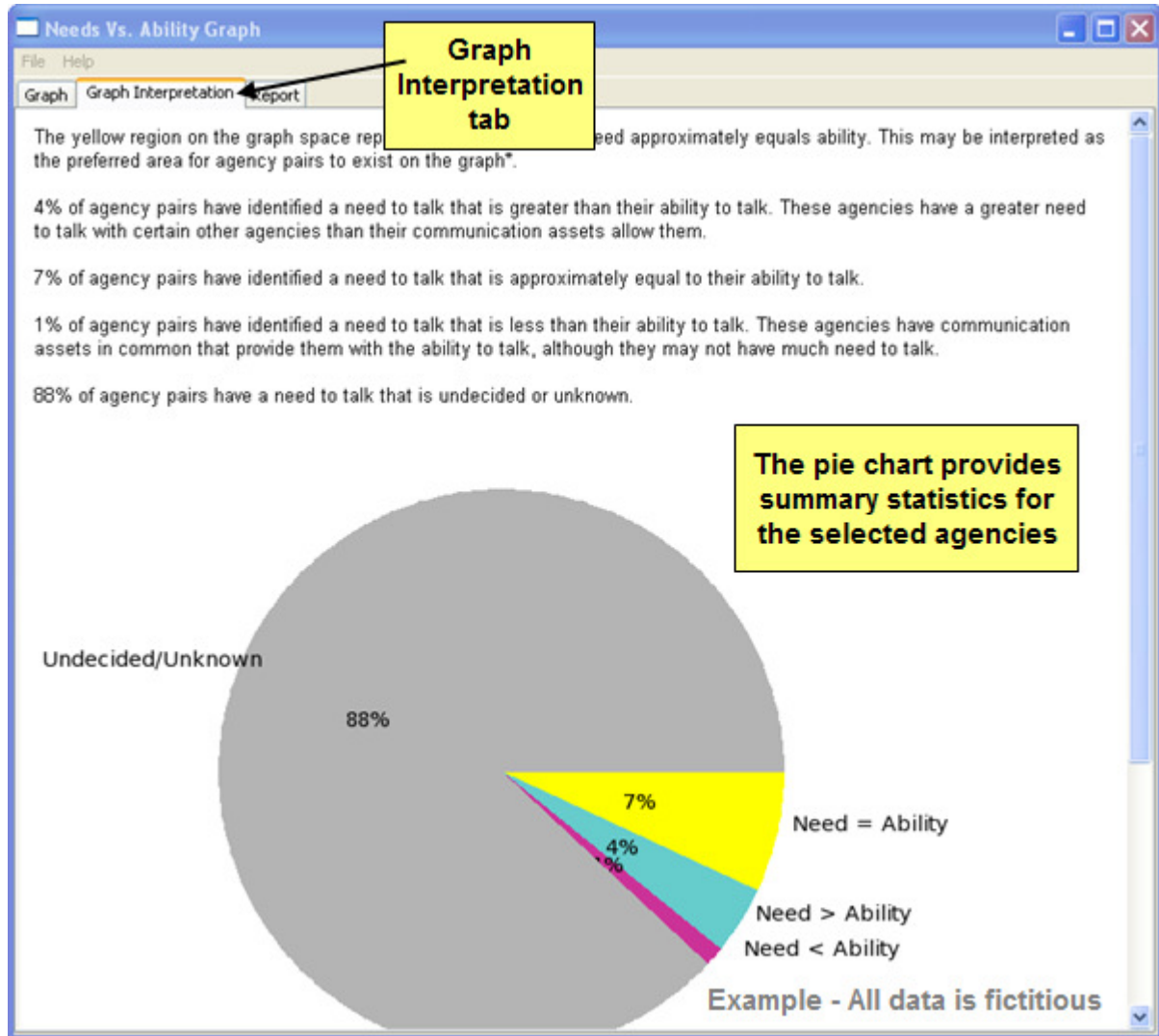
\*Note: For a single agency pair (Agency A and Agency B), there may be two levels of need entered. For example, the person entering the data for Agency A may say that Agency A needs to talk to Agency B on a "Daily/Often" basis. On the other hand, the person entering data for Agency B may say that Agency B only needs to talk to Agency A "Sometimes". While both responses are important, only the higher level of need will be reflected on the graph, in this



case, the pair will appear to have a level of need as "Daily/Often".

### Graph Interpretation

Click the Graph Interpretation Tab to view summary results of the data presented on the interactive graph.



[Need vs. Ability Graph Interpretation]

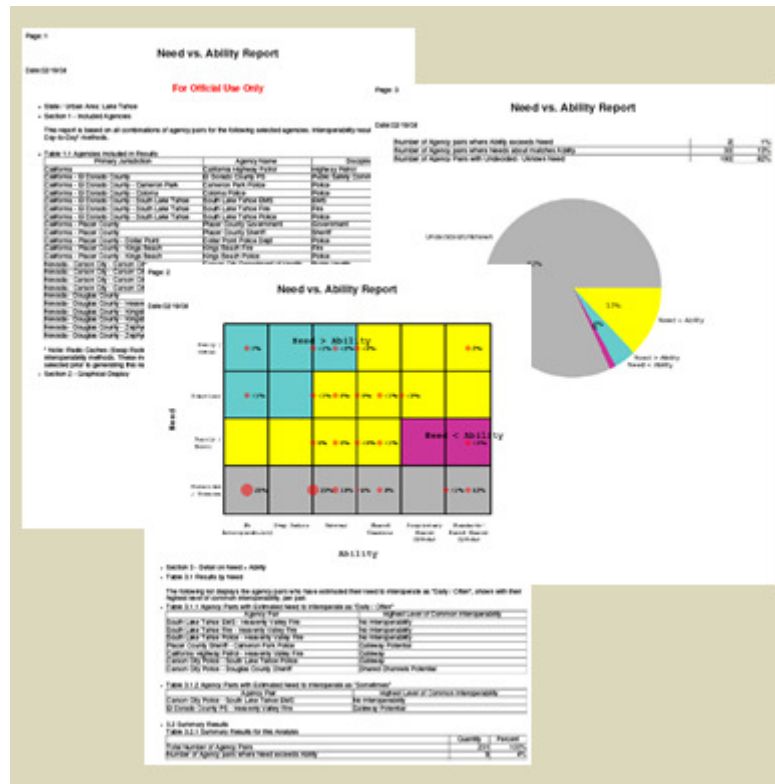
The agencies that appear in the white selection box are all the agencies that have "Talk Partner" data entered for them. If an agency does not have Talk Partner data entered for them, they will not appear in the list. In CAS, the level of "need to talk" is entered in the Agency Usage section, on the Talk Partner page.

### Need vs. Ability Report

Click the Report tab to view the Need vs. Ability Report. The report gathers the most pertinent data from the analysis and compiles it into one place so that you may view, print or save it.

In particular, the agency pairs that have a high level of need, but little or no ability

to interoperate are identified in the report.



[Need vs. Ability Report example]

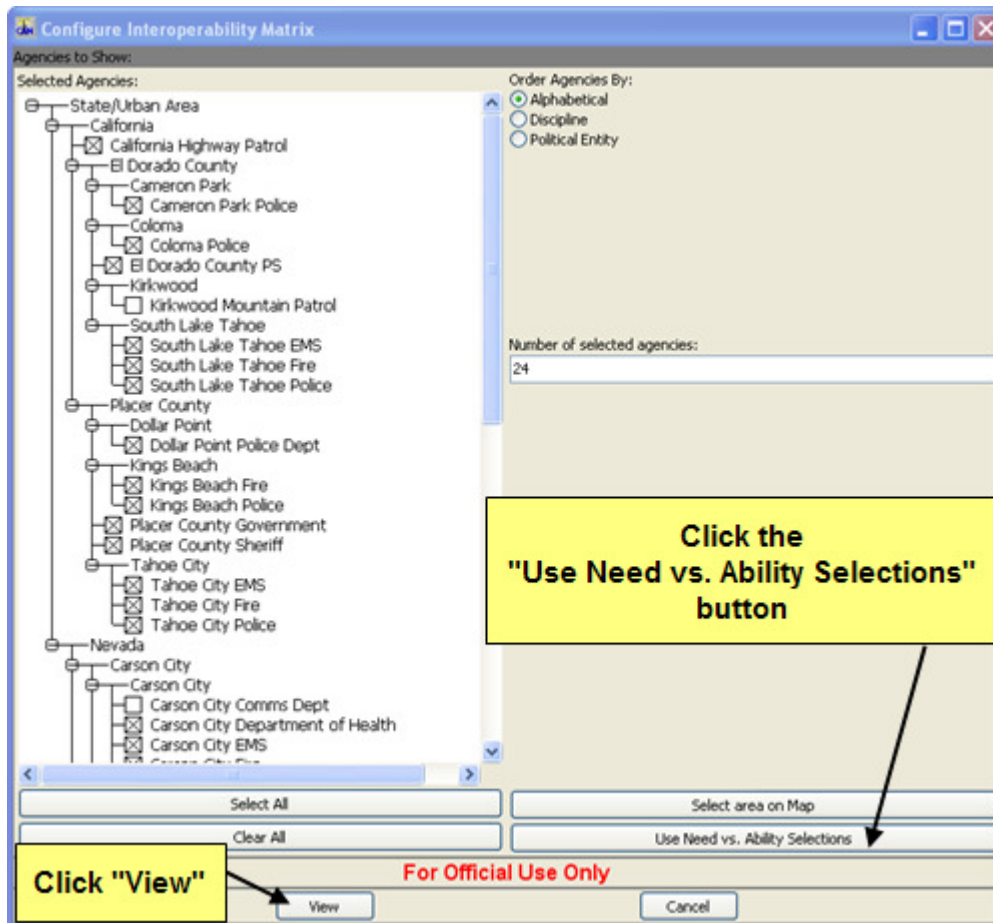
## Need vs. Ability & Interoperability Matrix

### Select Need vs. Ability agencies for Interoperability Matrix

After you have run a Need vs. Ability analysis during a CAM session, you can view the Interoperability Matrix using the same agency selections.

To generate the matrix, click on the Interoperability Matrix button on the main CAM window or select it from the Analysis menu.

On the Configure Interoperability Matrix window, click the button called "Use Need vs. Ability Selections". All the agencies that were used in your last Need vs. Ability analysis will be checked in the selection list.



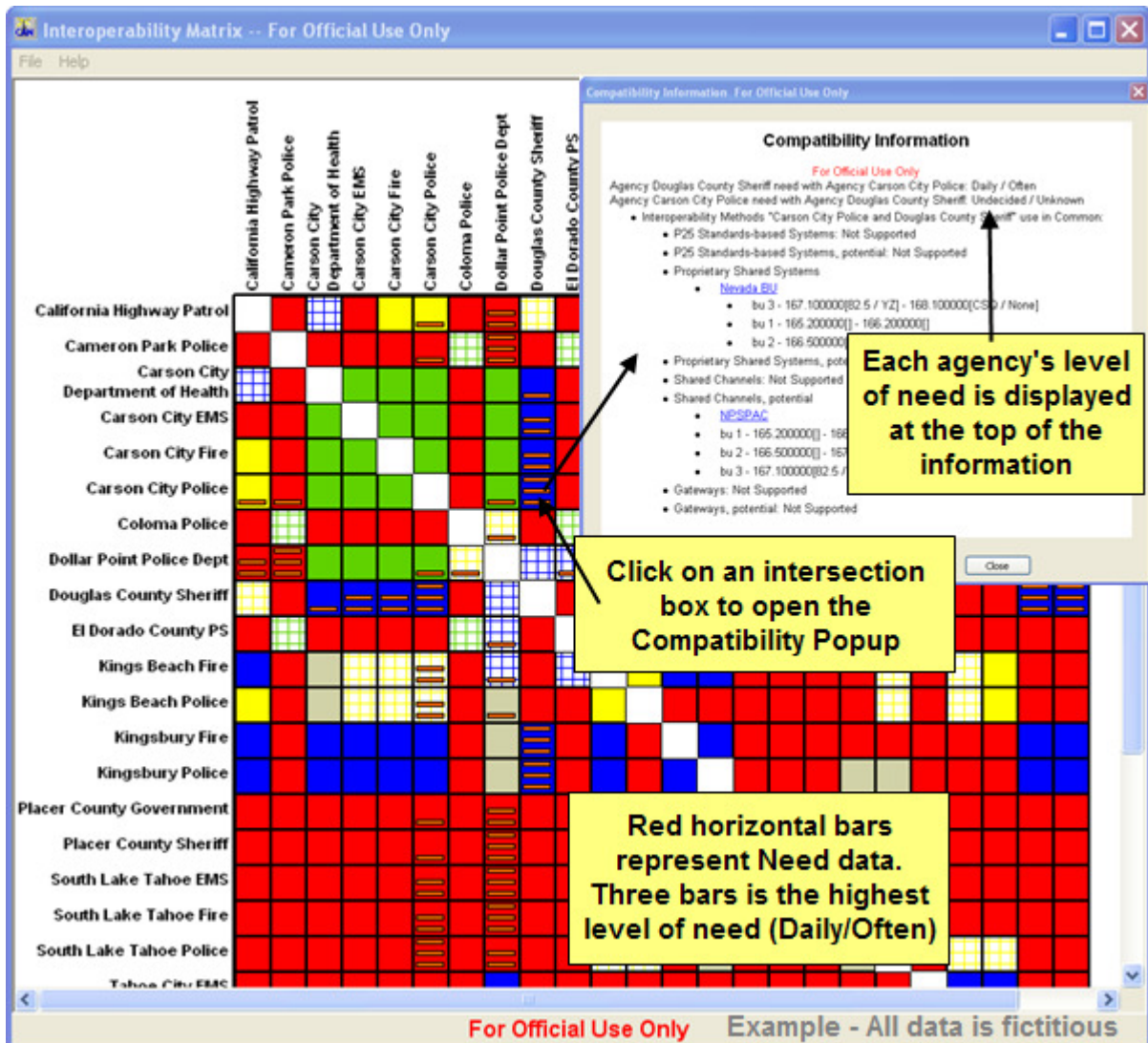
[Configure Interoperability Matrix]

Then click the "View" button.

### Interoperability Matrix

The matrix will display the standard colors at the intersection boxes and will also show the highest level of need using special icons on the intersection boxes.

The levels of need between the two agencies will appear on the Compatibility Popup when you click on an intersection box.



[Interoperability Matrix showing Need vs. Ability data]

Three red horizontal bars represent a need to talk that is "Daily/Often".  
 Two red horizontal bars represent a need to talk that is "Sometimes".  
 One red horizontal bar represents a need to talk that is "Rarely/Never".  
 No horizontal bars indicate that need data has not been entered for this agency pair.

## CASM Tutorial Wrap-up

**You are now acquainted with the CASM tool!**

For CAS, this tutorial focused on Radio Systems and Dispatch Center data entry and the agency(s) that use these resources. What you learned for these sections easily translates to the other sections of CAS that are not covered in this Tutorial:

- Mutual Aid section data entry is similar to Radio Systems

- Gateway and Radio Cache sections are similar to Dispatch Centers

For CAM, all basic functionality was introduced.



Remember that more help is available for each tool by clicking the Get Help icon in CAS or using the menu option Help --> on Window... in CAM.